

PB-214 869

WATER POLLUTION CONTROL RESEARCH AND
TRAINING GRANTS. LIST OF 1965 AWARDS:
RESEARCH GRANTS, RESEARCH FELLOWSHIPS,
TRAINING GRANTS, DEMONSTRATION GRANTS

Public Health Service
Washington, D. C.

1965

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PB 214 869

Water Pollution Control Research and Training Grants

List of 1965 Awards:

RESEARCH GRANTS
RESEARCH FELLOWSHIPS
TRAINING GRANTS
DEMONSTRATION GRANTS.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

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Water Pollution Control Research and Training Grants

List of 1965 Awards

RESEARCH GRANTS
RESEARCH FELLOWSHIPS
TRAINING GRANTS
DEMONSTRATION GRANTS

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Water Supply and Pollution Control
Washington, D. C. 20201

DISCRIMINATION PROHIBITED--Title VI of the Civil Rights Act of 1964 states:

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance."

Therefore, the Research and Training Grant Program of the Division of Water Supply and Pollution Control, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

Public Health Service Publication No. 1100

1965 Edition

FOREWORD

The Federal Water Pollution Control Act authorizes the award of grants-in-aid for research, training, and demonstration projects, and for research fellowships.

The purposes of these grants are to encourage, cooperate with, and assist appropriate authorities, agencies, institutions, and individuals in the conduct of studies and training relating to the causes, control and prevention of water pollution.

Support is available for projects and fellowships designed to improve the sanitary condition of water, to conserve water for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, agricultural, industrial and for other legitimate uses. Four types of grants are available.

Research Grants are awarded to individuals for the conduct of basic and applied research projects in water supply and pollution control. The purposes are to expand such research activities throughout the country, and to encourage investigators to undertake research in neglected areas.

Research Fellowships are awarded to individuals for the support of specialized research training in the institution of their choice. The purpose is to increase the number of scientists qualified to carry on independent research in water supply and pollution control.

Training Grants are awarded to institutions to establish or expand training in water supply and pollution control. The grants provide funds to support training programs in a variety of departments, including expansion and improvement of faculties, and payment of stipends to graduate students participating in the training program.

Demonstration Grants are awarded to public and private institutions and agencies to support investigations and studies of an applied nature, and to demonstrate the feasibility of new methods. These grants are designed to evaluate the application of research findings, and to expedite incorporation of new knowledge into routine water supply and pollution control practice.

Application: To obtain details concerning the various awards and to request forms for the submission of applications, write to:

Research and Training Grants Branch
Division of Water Supply and Pollution Control
Public Health Service
Washington, D. C. 20201

WATER POLLUTION CONTROL
RESEARCH AND TRAINING GRANTS
LIST OF 1965 AWARDS

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WATER POLLUTION CONTROL
RESEARCH AND TRAINING GRANT PROGRAM

SUMMARY OF AWARDS
FISCAL YEAR 1965

Grants	Number States	Number Institutions	Grants Awarded	Amounts Awarded
Research Grants	42	100	242	\$5,139,000
Research Fellowships	28	51	101	616,715
Training Grants	32	42	57	2,000,000
Demonstration Grants	20	28	30	1,164,992
ALL GRANTS	45	131	430	\$8,920,707

WATER POLLUTION CONTROL
RESEARCH GRANTS FISCAL YEAR 1965
SUMMARY OF GRANT AWARDS BY STATES

State	Institutions and Agencies	Number Awarded	Awarded
Alabama	2	2	\$ 39,996
Alaska	1	1	36,780
Arizona	1	2	27,990
Arkansas	1	1	18,000
California	8	22	508,127
Colorado	2	4	86,262
Connecticut	1	2	21,004
District of Columbia	1	1	17,237
Florida	3	13	313,937
Georgia	2	3	45,964
Illinois	4	14	282,145
Indiana	1	1	24,568
Iowa	2	6	89,925
Kansas	3	5	52,012
Kentucky	1	1	23,301
Louisiana	2	3	38,077
Maine	1	2	29,337
Maryland	2	4	62,947
Massachusetts	5	12	360,490
Michigan	2	10	525,000
Minnesota	1	5	160,459
Missouri	2	5	119,940
Montana	1	3	49,904
New Hampshire	1	1	30,564
New Jersey	2	8	80,857
New Mexico	2	2	31,242
New York	8	19	358,405
North Carolina	2	4	57,335
Ohio	4	11	163,286
Oklahoma	2	4	86,050
Oregon	1	12	240,268
Pennsylvania	5	6	119,520
Rhode Island	1	2	40,070
South Carolina	2	3	86,068
South Dakota	1	1	17,284
Tennessee	1	3	49,260
Texas	7	11	187,455
Utah	2	4	52,099
Virginia	2	2	23,913
Washington	2	15	357,019
West Virginia	1	2	38,277
Wisconsin	1	6	139,301
Foreign	4	4	47,325
42 States	100	242	\$5,139,000

Active Research Grants 1965

42 States, 4 Foreign Countries
120 Institutions and Agencies
299 Research Grants

WATER POLLUTION CONTROL
RESEARCH GRANTS
 FISCAL YEAR 1965

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>ALABAMA</u>			
<u>Auburn University</u> <u>Auburn</u>			
Funderburk, Henry H., Ph.D. Dept. Botany & Plant Pathology	Effect of Herbicides on an Aquatic Environment	WP-00636-02	\$23,136
<u>University of Alabama</u> <u>University</u>			
Walters, James V., Ph.D. Dept. of Civil Engineering	Nematodes in Sewage and Sewage Treatment Facilities	WP-00055-02	16,860
<u>ALASKA</u>			
<u>University of Alaska</u> <u>College</u>			
Dugdale, Richard C., Ph.D. Institute of Marine Science	Dynamics of the Nitrogen Cycle in Lakes	WP-00422-03	36,780
<u>ARIZONA</u>			
<u>Arizona State University</u> <u>Tempe</u>			
Klock, John W., Ph.D. Dept. of Civil Engineering	Engineering Bioassay Development	WP-00241-03	_____*
<u>University of Arizona</u> <u>Tucson</u>			
Bier, Milan, Ph.D. Dept. of Agricultural Biochemistry	Water Purification by Large Scale Electrophoresis	WP-00783-01	17,220
Bier, Milan, Ph.D. Dept. of Agricultural Biochemistry	Isolation of Water-Borne Bacteriophages by Electrophoresis	WP-00516-02	_____*
McIntosh, Thomas H., Ph.D. Dept. of Agricultural Chemistry and Soils	Biological Effect of Waste Waters on Soil Surfaces	WP-00672-02	10,770

*Active 1965 - Supported by funds awarded in 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>ARKANSAS</u>			
<u>University of Arkansas</u> <u>Fayetteville</u>			
Testerman, Maurice K. Dept. of Electronics and Instrumentation	Continuous Multiparameter Water Quality Monitor	WP-00044-04	\$ 18,000
Ward, John C., Ph.D. Dept. of Civil Engineering	Turbulent Flow in Porous Media	WP-00528-02	_____*
<u>CALIFORNIA</u>			
<u>California Institute of Technology</u> <u>Pasadena</u>			
Brooks, Norman H., Ph.D. Division of Engineering and Applied Science	Dynamics of Density-Stratified Ground-Water Flow	WP-00680-02	26,486
Brooks, Norman H., Ph.D. Division of Engineering and Applied	Dynamics of Density-Stratified Reservoirs	WP-00428-03	28,135
North, Wheeler J. Environmental Health Engineering Department	Marine Waste Disposal and Sea Urchin Ecology	WP-00697-01	20,511
<u>Long Beach State College Found.</u> <u>Long Beach</u>			
Reish, Donald J., Ph.D. Dept. of Biology	Studies on Indicator Species of Marine Pollution	WP-00531-02	11,460
<u>Los Angeles State College</u> <u>Los Angeles</u>			
Anderson, Dean A., Ph.D. Dept. of Microbiology and Public Health	Bacteria Utilizing Surfactants As Sole Carbon Source	WP-00327-02	_____*
<u>San Francisco State College</u> <u>San Francisco</u>			
Mackey, James P., Ph.D. Dept. of Biology	The Ecology of a Tidal Marsh Stream in California	WP-00644-01	_____*
<u>Sewage Treatment Laboratory</u> <u>Concord</u>			
Aitken, Thomas W. Sewage Treatment Laboratory	The Systematic Phycology of an Oxidation Pond	WP-00638-02	2,316
<u>Stanford University</u> <u>Stanford</u>			
Franzini, Joseph B., Ph.D. Dept. of Civil Engineering	Investigation of Infiltration Phenomena	WP-00246-04	22,330

*Active 1965 - Supported by funds awarded in 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>CALIFORNIA (cont.)</u>			
<u>Stanford University</u>			
<u>Stanford</u>			
McCarty, Perry L., Ph.D. Dept. of Civil Engineering	Anaerobic Waste Treatment Kinetics	WP-00584-02	\$ 19,968
McCarty, Perry L., Ph.D. Dept. of Civil Engineering	Pesticide Distribution and Degradation in Waterways	WP-00715-01	22,023
<u>University of California</u>			
<u>Berkeley</u>			
Fuerstenau, Douglas W. Dept. of Mineral Technology	Adsorption of Alkylaryl Surfactants on Polar Solids	WP-00692-01	27,290
Jenkins, David, Ph.D. Institute of Engineering Research	Transient Loading Effects in the Activated Sludge Process	WP-00787-01	20,500
Kaufman, Warren J., Sc.D. Division of Hydraulic Engineering	Partial Demineralization of Saline Sewage by Ion Exchange	WP-00544-03	24,600
Kaufman, Warren J., Sc.D. Division of Hydraulic Engineering	Orthokinetic Flocculation of Heterodispersed Systems	WP-00658-02	16,320
McGauhey, Percy H. Institute of Engineering Research	Soil Mantle As a Wastewater Treatment System	WP-00764-01A1	36,000
McGauhey, Percy H. Institute of Engineering Research	Travel of Synthetic Detergents with Percolating Water	WP-00207-05	36,330
McGauhey, Percy H. Institute of Engineering Research	Economic Evaluation of Water Quality	WP-00597-02	16,920
McGauhey, Percy H. Institute of Engineering Research	Application of Foam Fractionation to Sewage	WP-00396-02	_____*
Oswald, William J., Ph.D. Institute of Engineering Research	Nutritional and Disease Transmitting Properties of Sewage Grown Algae	WP-00026-04	26,546
Pearson, Erman A., Sc.D. Institute of Engineering Research	Reaction Kinetics of Anaerobic Fermentation Systems	WP-00830-01	33,300
Selleck, Robert E., Ph.D. Dept. of Civil Engineering	Estuarine Water Quality Interrelationships	WP-00649-01	28,500

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>CALIFORNIA (cont.)</u>			
<u>University of California</u> <u>Davis</u>			
Biggar, James W., Ph.D. Dept. of Irrigation	Soil Interaction with Organically Polluted Water	WP-00081-04	\$ 16,359
<u>University of California</u> <u>Riverside</u>			
Bradford, Gordon R. Dept. of Soils and Plant Nutrition	Effect of Trace Elements Re-Use of Water	WP-00484-02	12,375
<u>University of Southern California</u> <u>Los Angeles</u>			
Bandy, Orville L., Ph.D. Dept. of Geology	Benthonic Foraminifera Relationship to Ocean Pollution	WP-00158-06	24,378
Mohr, John L., Ph.D. Allan Hancock Foundation	The Influence of Pollution on Marine Invertebrates	WP-00463-01	_____*
Tibby, Richard B., Ph.D. Dept. of Biological Sciences	Ultraviolet Absorption in Coastal Waters	WP-00762-01A1	35,480
<u>COLORADO</u>			
<u>Colorado State University</u> <u>Fort Collins</u>			
Corey, Arthur T. Dept. of Agricultural Engr.	Transport of Particles Through Unsaturated Soils	WP-00349-02	_____*
Hanan, Joe J., Ph.D. Dept. of Horticulture	Irrigation Regimes for Water Conservation	WP-00780-01	35,994
Morrison, S. M., Ph.D. Dept. of Pathology and Microbiology	Watershed Environment and Microbial Dynamics	WP-00679-02	25,242
Ward, John C., Ph.D. Dept. of Civil Engineering	Turbulent Flow in Porous Media	WP-00914-01	11,938
Yevdjovich, Vujica M., Ph.D. Dept. of Civil Engineering	Unsteady Flow in Storm Drains	WP-00115-03	_____*
<u>University of Colorado</u> <u>Boulder</u>			
West, Ronald E. Dept. of Chemical Engineering	The Effect of Porous Structure on Carbon Activation	WP-00853-01	13,088
<u>University of Colorado</u> <u>Medical School</u> <u>Denver</u>			
Dunlop, Stuart G., Ph.D. Dept. of Microbiology	Enteric Pathogens and Viruses in Irrigation Water	WP-119-10	_____*

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>CONNECTICUT</u>			
<u>University of Connecticut</u> <u>Storrs</u>			
Collins, Ralph P., Ph.D. Dept. of Botany	A Study of Microorganisms Inducing Tastes and Odors in Water	WP-00005-04	\$ 13,564
Trainer, Francis R. Dept. of Botany	A Study of Scenedesmus Species Species in Culture	WP-00850-01	7,440
<u>DISTRICT OF COLUMBIA</u>			
Levine, Bejmain S., Ph.D. <u>Individual</u>	USSR Literature on Water Supply and Pollution Control	WP-00305-06 WP-00305-06S1	4,510 12,727
<u>Water Pollution Control</u> <u>Federation</u> <u>Washington</u>			
Fuhrman, Ralph E., Ph.D. Executive Secretary	Second International Conference on Water Pollution Research	WP-00583-01	_____*
<u>FLORIDA</u>			
<u>Florida State Board of Health</u> <u>Jacksonville</u>			
Yount, James L., Ph.D. Midge Research Laboratory	Causes and Relief of Hypereutrophication of Lakes	WP-00216-05	29,389
<u>Florida State University</u> <u>Tallahassee</u>			
Godfrey, R. K., Ph.D. Dept. of Biological Sciences	Marsh Plants of the Florida Area as Related to Water Pollution	WP-00767-06	_____*
<u>University of Florida</u> <u>Gainesville</u>			
Berner, Lewis, Ph.D. Dept. of Zoology	Immature Insects of the Southeastern River Beds	WP-00372-03	10,449
Black, Alvin P., Ph.D. Dept. of Chemistry	A Comprehensive Study of Water Coagulation	WP-00139-10	28,074
Brunn, Per Moller, Sc.D. Coastal Engr. Laboratory	Fluorescent Tracing of Sediments in Coastal Areas	WP-00057-04	20,928
Calaway, Wilson T. Dept. of Entomology	Nematodes in Sewage Treatment and Their Significance	WP-00508-03	20,878
Morgan, James J., Ph.D. Civil Engineering Department	Flocculation Behavior of Dilute Clay-Polymer Systems	WP-00845-01	6,210
Morgan, James J., Ph.D. Civil Engineering Department	The Chemistry of Manganese in Natural Waters	WP-00732-01	16,036

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>FLORIDA (cont.)</u>			
<u>University of Florida</u> <u>Gainesville</u>			
Nordlie, Frank G., Ph.D. Dept. of Zoology	Chemical and Biological Dynamics in Two Solution Lakes	WP-00530-02	\$ 5,100
Putnam, Hugh D., Ph.D. Dept. of Civil Engineering	Primary Production and Decomposition in Estuarine Water	WP-00578-01	25,331
Smith, Paul H., Ph.D. Dept. of Bacteriology	Studies on the Methanogenic Bacteria in Sludge	WP-00194-05	_____*
<u>University of Miami</u> <u>Coral Gables</u>			
Greenfield, Leonard J., Ph.D. Institute of Marine Science	Contribution of Microbial Calcification to Sediments	WP-00902-01	17,593
Ivill, C. P., Ph.D. Institute of Marine Science	Estuarine Ecology Study in Relation to Water Use	WP-00400-02	75,322
Moore, Hilary B., Ph.D. Institute of Marine Science	The Biology of the Infauna of a Tropical Soft Bottom Area	WP-00573-02 WP-00573-02S1	22,381 11,438
Wood, Edward J. F. Microbiology Dept.	Periphyton of the Everglades (An Unpolluted System)	WP-00709-01A1	24,808
<u>GEORGIA</u>			
<u>Georgia Institute of Technology</u> <u>Atlanta</u>			
Ingols, Robert S., Ph.D. Engineering Experiment Station	Biodegradation of Halogenated Phenolics	WP-00188-05	13,920
O'Melia, Charles R., Ph.D. School of Civil Engineering	The Role of Zeta Potential in Sand Filtration	WP-00382-03	14,820
<u>Georgia State College</u> <u>Atlanta</u>			
Singley, John E. Dept. of Chemistry	Stoichiometry and Mechanisms of Coagulation	WP-00717-01	17,224
<u>ILLINOIS</u>			
<u>Eastern Illinois University</u> <u>Charleston</u>			
Durham, Leonard, Ph.D. Dept. of Zoology	Recovery of a Stream System from Cyanide Poisoning	WP-00792-01	9,919
<u>Illinois Institute of Technology</u> <u>Chicago</u>			
Grieves, Robert B., Ph.D. Dept. of Civil Engineering	The Foam Fractionation of Petrochemical Waste Waters	WP-00643-01	_____*

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>ILLINOIS (cont.)</u>			
<u>Illinois Institute of Technology</u> <u>Chicago</u>			
Grieves, Robert B., Ph.D. Dept. of Civil Engineering	Foam Separation-Flotation of Colloid-Organic Systems	WP-00702-01	\$ 20,004
Kintner, Robert C., Ph.D. Chemical Engineering Dept.	Coalescence of Drops in Fibrous Beds	WP-00366-03	18,618
Martell, Arthur E., Ph.D. Dept. of Chemistry	Permanganate Oxidation of Phenols and Aromatic Amines	WP-00744-01	28,584
<u>Northwestern University</u> <u>Evanston</u>			
Charnes, Abraham, Ph.D. Engineering Sciences Dept.	Systems Analysis of Municipal Sewage Treatment	WP-00019-06	24,960
Pipes, Wesley O., Ph.D. Civil Engineering Dept.	Ecology of <u>Sphaerotilus</u> in Activated Sludge	WP-00588-01A1	22,743
<u>University of Illinois</u> <u>Urbana</u>			
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Factors Influencing Free- Living Nematodes in Water	WP-00047-04	29,464
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Fundamental Factors in Treatment of Iron-Bearing Waters	WP-00017-06	_____*
Engelbrecht, Richard S., Sc.D. Dept. of Civil Engineering	Contact Removal of Organic Matter by Microorganisms	WP-00640-02	23,917
Evans, Ralph L. Illinois State Water Survey	Effect of Coarse Filter Media on Artificial Recharge	WP-00447-03	8,086
Ewing, Ben B., Ph.D. Dept. of Civil Engineering	Fate of Synthetic Detergents in Soil and Ground Water	WP-00018-05	_____*
Ewing, Ben B., Ph.D. Dept. of Civil Engineering	Organo-Clay Adsorptive Reactions and Water Coagulation	WP-00801-01	24,488
Grim, Ralph E., Ph.D. Dept. of Geology	Atomic Structural Control of Selective Adsorption	WP-00399-02	_____*
Larson, Thurston E., Ph.D. Illinois State Water Survey	Corrosion and Tuberculation in Distribution Systems	WP-00132-09	18,786
Larson, Thurston E., Ph.D. Illinois State Water Survey	Chromatographic Analysis for Organic Acids in Water	WP-00270-05	_____*
McPherson, Murray B. Dept. of Civil Engineering	Criteria for Analysis of Water Distribution Systems	WP-00526-02	18,300

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>ILLINOIS (cont.)</u>			
<u>University of Illinois</u> <u>Urbana</u>			
Speece, Richard E., Ph.D. Dept. of Civil Engineering	Controlling Factors in Methane Fermentation	WP-00394-03	\$ 17,836
Quinn, John A., Ph.D. Dept. of Chemistry and Chemical Engineering	Mass Transfer Through Interfaces	WP-00601-02	16,460
Wolfe, R. S., Ph.D. Dept. of Microbiology	Microbiology of the Dilute Enrichment	WP-00016-06	_____*
<u>INDIANA</u>			
<u>Purdue Research Foundation</u> <u>Purdue University</u> <u>Lafayette</u>			
Bloodgood, Don E. Dept. of Civil Engineering	Sludge Concentration by Pressure Wave Irradiation	WP-00232-02	_____*
Kirsch, Edwin J., Ph.D. Dept. of Sanitary Engineering	Microbial Interactions in Waste Treatment Processes	WP-00760-01	24,568
<u>IOWA</u>			
<u>Iowa State University of Science</u> <u>and Technology</u> <u>Ames</u>			
Dodd, John D., Ph.D. Dept. of Botany and Plant Pathology	Ecology of Diatoms in Hardwater Habitats	WP-00221-05	6,660
Kirkham, Don, Ph.D. Dept. of Agronomy	Movement of Water from Waste Recharge Installations	WP-00070-04	18,782
Morgan, Paul E. Dept. of Civil Engineering	Design Requirements for Municipal Diatomite Filters	WP-00196-05	24,360
<u>State University of Iowa</u> <u>Iowa City</u>			
McDonald, Donald B., Ph.D. Dept. of Civil Engineering	Factors Affecting Actinomycete Populations	WP-00740-01	4,982
Morris, Robert L., Ph.D. State Hygienic Laboratory	Effect of Surface Water Actinomycetes on BOD vs COD	WP-00378-03	21,697
Smith, H. Sidwell, Ph.D. Dept. of Civil Engineering	Oxygen Use Rate in Activated Sludge Systems	WP-00695-01	13,444

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>KANSAS</u>			
<u>Kansas State Teachers College</u> <u>Emporia</u>			
Prophet, Carl W., Ph.D. Dept. of Biology	Limnology of the John Redmond Reservoir, Kansas	WP-00615-02	\$ 4,404
<u>Kansas State University</u> <u>Manhattan</u>			
Lambert, Jack L., Ph.D. Dept. of Chemistry	Ligand Exchange Reagents	WP-00326-04	8,508
Lambert, Jack L., Ph.D. Dept. of Chemistry	Determination of Ammonia	WP-00235-04	7,533
<u>University of Kansas</u> <u>Lawrence</u>			
McKianey, Ross E., Sc.D. Dept. of Civil Engineering	Complete Mixing Activated Sludge	WP-00248-03	_____*
<u>University of Kansas</u> <u>Center for Research, Inc.</u> <u>Lawrence</u>			
Loehr, Raymond C., Ph.D. Dept. of Civil Engineering	Aerobic Microbial Degradation of Lipids	WP-00341-03	16,380
Pfeffer, John T., Ph.D. Dept. of Civil Engineering	Trace Element Needs of Filamentous Microorganisms	WP-00646-02	15,187
<u>KENTUCKY</u>			
<u>Kentucky Research Foundation</u> <u>University of Kentucky</u> <u>Lexington</u>			
Lauderdale, Robert A., Ph.D. Dept. of Civil Engineering	Removal of Pesticides from the Environment	WP-00467-02	23,301
<u>LOUISIANA</u>			
<u>Aquatic Ecology Section</u> <u>Ecological Society of America</u>			
Gunning, Gerald E., Ph.D. Secretary, Aquatic Ecology Section, New Orleans	Travel Request U.S. Participants to XVI ICL, Poland (International Congress of Limnology)	WP-00898-01	17,437
<u>Louisiana State University</u> <u>Baton Rouge</u>			
Colmer, Arthur R., Ph.D. Dept. of Bacteriology	Autotrophic Iron Oxidizers from Acid Waste Waters	WP-00549-03	7,440
West, Philip W., Ph.D. Dept. of Chemistry	Sampling and Determining Traces of Silver in Waters	WP-00788-01	13,200

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>LOUISIANA (cont.)</u>			
<u>Tulane University</u> <u>New Orleans</u>			
Suttkus, R. D., Ph.D. Department of Zoology	Pearl River Fishes-Index Pre-Pollution Surveys	WP-00082-05	_____*
<u>MAINE</u>			
<u>University of Maine</u> <u>Orono</u>			
Sproul, Otis J., Sc.D. Dept. of Civil Engineering	Effects of Chemical Ions on Virus Inactivation	WP-00387-02	\$ 17,520
Zieminski, Stefan A., Sc.D. Chemical Engineering Dept.	Use of Chemical Additives to Improve Aeration Rates	WP-00562-02	11,817
<u>MARYLAND</u>			
<u>The Johns Hopkins University</u> <u>Baltimore</u>			
Geyer, John C., Ph.D. Dept. of Sanitary Engineering and Water Resources	Ground Water Storage Project	WP-00444-03	29,020
Renn, Charles E., Ph.D. Dept. of Sanitary Engineering	Reducing Secondary Effluent Phosphorus Concentration	WP-00099-04	11,518
Shapiro, Joseph, Ph.D. Dept. of Sanitary Engineering	Inorganic-Organic Interactions in Natural Waters	WP-00199-05	_____*
<u>University of Maryland</u> <u>College Park</u>			
Marchello, Joseph M. Dept. of Chemical Engineering	Role of Ripples and Molecular Films on Mass Transfer	WP-00323-04	16,791
Stross, Raymond G., Ph.D. Zoology Department	Control of Nuisance Algae in Lakes	WP-00101-03	5,618
<u>MASSACHUSETTS</u>			
<u>Boston University</u> <u>Boston</u>			
Jones, Galen E., Ph.D. Dept. of Biology	Effect of Organic Substances from Sea on Bacteria	WP-00650-02	25,194
<u>Harvard University</u> <u>Cambridge</u>			
Fair, Gordon M., Sc.D. Dept. of Water Resources and Sanitary Engineering	Internal Hydraulic Work in Flocculation	WP-00024-05	26,371
Fair, Gordon M., Sc.D. Div. of Environmental Sciences and Engineering	Inhibition and Repression in Substrate Utilization	WP-00621-02	16,740

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>MASSACHUSETTS (cont.)</u>			
<u>Harvard University</u> <u>Cambridge</u>			
Stumm, Werner, Ph.D. Division of Engineering and Applied Physics	Oxygenation Rate of Ferrous Iron in Natural Waters	WP-00013-06	\$ 15,300
Stumm, Werner, Ph.D. Division of Engineering and Applied Physics	Symposium on Concepts in Water Analysis	WP-00899-01	13,481
Stumm, Werner, Ph.D. Division of Engineering and Applied Physics	Modes of Corrosion Inhibition in Natural Waters	WP-00043-04	15,634
Stumm, Werner, Ph.D. Division of Engineering and Applied Physics	Chemical Aspects of Coagulation	WP-00098-03S1	17,376
		WP-00098-04	28,812
Thomas, Harold A., Jr., Sc.D. Dept. of Environmental Engr.	Operations Research in Water Quality Management	WP-00111-03	99,523
<u>Harvard University</u> <u>School of Public Health</u> <u>Boston</u>			
Thomas, Harold A., Jr., Sc.D. Dept. of Sanitary Engineering	Transport and Fate of Pollutants in Soil	WP-00626-01	46,740
<u>Massachusetts Health Research</u> <u>Institute Inc.</u> <u>Boston</u>			
Delaney, John E. Lawrence Experiment Station	Methods for Measuring the Coliform Content of Water	WP-00202-05	15,396
<u>Massachusetts Institute</u> <u>of Technology</u> <u>Cambridge</u>			
Harleman, Donald R. F., Sc.D. Dept. of Civil Engineering	Pollutants in Heterogeneous and Anisotropic Aquifers	WP-00711-01	20,632
Harleman, Donald R. F., Sc.D. Dept. of Civil Engineering	Waste Water Recharge and Dispersion in Porous Media	WP-00347-02	_____*
Harleman, Donald R. F., Sc.D. Dept. of Civil Engineering	Mechanics of Aeration and Dispersion in River Pollution	WP-00071-03	_____*
McLaughlin, Ronald T., Ph.D. Dept. of Civil Engineering	Optimal Design of Sewer and Drainage Systems	WP-00812-01	19,291
<u>University of Massachusetts</u> <u>Amherst</u>			
Carver, Charles E., Jr., Sc.D. Dept. of Civil Engineering	Efficiency of Oxygen Transfer in Spray Aeration	WP-00450-01	_____*

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>MICHIGAN</u>			
<u>Michigan State University</u> <u>East Lansing</u>			
Ball, Robert C., Ph.D. Dept. of Fisheries and Wildlife	Serum Stress Patterns as Related to Stream Ecology	WP-00369-03	\$ 14,435
<u>University of Michigan</u> <u>Ann Arbor</u>			
Ayers, John C., Ph.D. Great Lakes Research Div.	A Coherent Area Study of Southern Lake Michigan	WP-00311-02	283,786
Ayers, John C., Ph.D. Great Lakes Research Div.	Ecology-Water Quality Changes in Lakes Michigan, Erie	WP-00226-04	_____*
Borchardt, J. A., Ph.D. Dept. of Civil Engineering	Sand Filtration of Discrete Suspensions	WP-00329-03	7,416
Borchardt, J. A., Ph.D. Dept. of Civil Engineering	Organic Decomposition at Poised O-R Potential Levels	WP-00333-03	16,695
Borchardt, J. A., Ph.D. Dept. of Civil Engineering	The Use of Algae in the Treatment of Sewage Effluents	WP-00155-06\$2	6,656
		WP-00155-07	19,970
Brater, Ernest F., Ph.D. Dept. of Civil Engineering	Rainfall-Runoff Relations on Urban and Rural Areas	WP-00834-01	15,182
Noble, Vincent E., Ph.D. Great Lakes Research Div.	Vertical Current Structure in the Great Lakes	WP-00794-01	26,672
Velz, Clarence J. Dept. of Environmental Health	Biological Extraction and Accumulation in Streams	WP-00091-04	78,423
Velz, Clarence J. Dept. of Environmental Health	Investigation of Pumped Storage for Flow Augmentation	WP-00689-02	32,127
Weber, Walter J., Jr., Ph.D. Dept. of Civil Engineering	Adsorption from Aqueous Solution	WP-00706-01A1	23,638
<u>MINNESOTA</u>			
<u>University of Minnesota</u> <u>Minneapolis</u>			
Anderson, Alvin G. St. Anthony Falls Hydraulic Lab.	Flow Conditions in Soils and Filters	WP-00796-01	28,907
Olson, Theodore A. School of Public Health	Lake Superior Periphyton in Relation to Water Quality	WP-00828-01	36,355
Olson, Theodore A. School of Public Health	Benthonic Invertebrates as an Index of Water Quality	WP-00320-03	22,614
Shapiro, Joseph, Ph.D. Dept. of Geology	Inorganic-Organic Interactions in Natural Waters	WP-00771-01	39,295
Smith, Lloyd L., Jr., Ph.D. Dept. of Entomology Fisheries and Wildlife	Effect of Paper Fiber Wastes on Fish Eggs and Juveniles	WP-00223-05	33,288

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>MISSOURI</u>			
<u>University of Missouri</u> <u>Columbia</u>			
Campbell, Robert S., Ph.D. Dept. of Zoology	Recovery from Acid Pollution in Four Strip-Mine Lakes	WP-00379-03 WP-00379-03\$1	\$ 15,443 3,400
Enns, Wilbur R., Ph.D. Dept. of Entomology	Insects Associated with Midwestern Oxidation Lagoons	WP-00718-01	20,183
Smith, George E., Ph.D. Dept. of Soils	Nitrates in Water Supplies	WP-00533-02	15,143
<u>Washington University</u> <u>St. Louis</u>			
Skrinde, Rolf T., Ph.D. Dept. of Environmental and Sanitary Engineering	Detection and Removal of Organic Pesticides in Water	WP-00433-03	27,491
Skrinde, Rolf T., Ph.D. Dept. of Environmental and Sanitary Engineering	Chemical Oxidation of Trace Organics in Water	WP-00346-03	38,280
<u>MONTANA</u>			
<u>Montana State College</u> <u>Bozeman</u>			
Berg, Lloyd, Ph.D. Dept. of Chemical Engineering	Terpenes from Sulfate Pulp Mill Waste Liquor	WP-00510-03	9,545
Brown, C. J. D., Ph.D. Dept. of Zoology and Entomology	Effects of Pollutants on Fish Blood Serum Patterns	WP-00438-01A2	14,122
Wright, John C., Ph.D. Dept. of Botany & Bacteriology	Hydrobiology of the Madison River and its Headwaters	WP-00125-03	26,237
<u>NEW HAMPSHIRE</u>			
<u>University of New Hampshire</u> <u>Durham</u>			
Slanetz, Lawrence W., Ph.D. Dept. of Microbiology	Enteric Bacteria and Viruses in Sewage, Water and Shellfish	WP-00009-09	30,564
<u>NEW JERSEY</u>			
<u>Newark College of Engineering</u> <u>Newark</u>			
Metzger, Ivan Dept. of Civil Engineering	Equalization of Liquid Wastes	WP-00041-02	_____*
<u>Princeton University</u> <u>Princeton</u>			
Brush, Lucien M., Jr., Ph.D. Dept. of Civil Engineering	Inertial Effects in Turbulent Suspensions	WP-00772-01	10,942

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>NEW JERSEY (cont.)</u>			
<u>Rutgers, The State University</u> <u>New Brunswick</u>			
Dondero, Norman C., Ph.D. Dept. of Environmental Science	Adaptation by Microbial Populations	WP-00645-02	\$ 13,326
Dondero, Norman C., Ph.D. Dept. of Environmental Science	Continuous Flow and Batch Cultures of <u>Sphaerotilus</u>	WP-00212-05	18,886
Faust, Samuel D., Ph.D. Dept. of Environmental Science	Determination of Phenols in Water and Wastewater	WP-00365-03	7,560
Faust, Samuel D., Ph.D. Dept. of Environmental Science	Organic Pesticides and Herbicides from Water	WP-00206-05	8,510
Faust, Samuel D., Ph.D. Dept. of Environmental Science	Principles and Applications of Water Chemistry Conference	WP-00860-01	7,255
Heukelekian H., Ph.D. Dept. of Environmental Science	The Effect of Composition of Waste Water on the Activated Sludge Characteristics	WP-00133-09	5,450
Lechevalier, Hubert A., Ph.D. Institute of Microbiology	Odor Producing Substances of Actinomycetes	WP-00515-02	_____*
Starkey, Robert L., Ph.D. Dept. of Agric. Microbiology	Microbial Transformations of Organic Sulfur Compounds	WP-00006-03	_____*
Trama, Francesco B., Ph.D. Dept. of Zoology	Impoundment Studies on the Raritan River, New Jersey	WP-00059-04	8,928
<u>NEW MEXICO</u>			
<u>Eastern New Mexico University</u> <u>Portales</u>			
Sublette, James E., Ph.D. Departments of Biological Sciences and Chemistry	Cytotaxonomy and Related Studies of Holarctic Midges	WP-00468-02	13,175
<u>New Mexico State University</u> <u>University Park</u>			
Clark, John W. Dept. of Civil Engineering	Continuous Monitoring of Some Organic Wastes	WP-00631-01A1	18,067
<u>NEW YORK</u>			
<u>Boyce Thompson Institute for</u> <u>Plant Research, Inc.</u> <u>Yonkers</u>			
Torgeson, Dewayne C., Ph.D. Program Director, Bioregulant Chemicals	Interaction of Herbicides and Soil Microorganisms	WP-00750-01	27,892

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>NEW YORK (cont.)</u>			
<u>City College Research Foundation</u> <u>New York</u>			
Haines, Thomas H., Ph.D. Dept. of Chemistry	Structure and Function of a New Sulfolipid	WP-00675-02	\$ 12,289
<u>Clarkson College of Technology</u> <u>Potsdam</u>			
Jellinek, H. H. G., Ph.D. Dept. of Chemistry	Photodegradation of Polymers in Aqueous Solutions	WP-00791-01	24,972
Matijevic, Egon, Ph.D. Dept. of Chemistry	Flocculation of Colloids Suspended in Water	WP-00815-01	22,220
<u>Columbia University</u> <u>New York</u>			
Gumbel, Emil J., Ph.D. Dept. of Industrial and Management Engineering	Statistical Theory of Extreme Values and Their Applications in Hydrology	WP-00457-03	13,782
LaMer, Victor K., Ph.D. Dept. of Chemical Engineering	Cationic Polymers as Flocculant Aids in Water	WP-00240-04	42,046
<u>Cornell University</u> <u>Ithaca</u>			
Barlow, John P., Ph.D. Dept. of Conservation	Eutrophication of Tidal Waters	WP-00176-07A1	24,144
Behn, Vaughn C., Ph.D. Dept. of Sanitary Engineering	Analysis of Trickling Filter Experimental Model	WP-00234-04	10,854
Behn, Vaughn C., Ph.D. Dept. of Sanitary Engineering	Mass Transfer into Non- Newtonian Systems	WP-00229-04	_____*
Liggett, James A., Ph.D. School of Civil Engineering	Settling Velocities in a Turbulent Environment	WP-00605-02	15,183
<u>Manhattan College</u> <u>New York</u>			
Farrell, Joseph B., Ph.D. Chemical Engineering Dept.	Prevention of Chromate Pollution by Electrodialysis	WP-00742-01	23,460
Jeris, John S., Sc.D. Civil Engineering Dept.	The Biochemistry of Anerobic Digestion	WP-00577-02	15,878
O'Connor, Donald J., Sc.D. Dept. of Civil Engineering	Estuarine Water Quality and Pollution	WP-00677-02	18,000
O'Connor, Donald J., Ph.D. Dept. of Civil Engineering	Effect of Physical and Chemical Variables on Reaeration	WP-00142-05	_____*

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>NEW YORK (cont.)</u>			
<u>New York University</u>			
<u>New York</u>			
Edwards, Gail P., Ph.D.	A Critical Study of	WP-00339-02S1	_____*
Sanitary Engineering	Analytical Methods for Sea	WP-00339-03	_____*
Laboratory	Water		
Molof, Alan, Ph.D.	Cation Effecton in Anaerobic	WP-00690-02	\$ 14,692
Dept. of Civil Engineering	Waste Treatment		
Mehr, Emanuel	Computer Interpretation of	WP-00662-01	_____*
Data Processing and Computation	Dye Dump Studies		
Laboratory			
<u>Polytechnic Institute of Brooklyn</u>			
<u>Brooklyn</u>			
Bruins, Paul F., Ph.D.	Advance Waste Treatment by	WP-00620-01	_____*
Chemical Engineering Dept.	Ultrafiltration		
<u>Rensselaer Polytechnic Institute</u>			
<u>Troy</u>			
Washington, Donald R., Ph.D.	Effect of Loading on	WP-00228-03	_____*
Dept. of Civil Engineering	Assimilation in Activated		
	Sludge		
<u>Syracuse University</u>			
<u>Syracuse</u>			
Barduhn, Allen J., Ph.D.	Removal of Dissolved Organic	WP-00729-01	9,792
Dept. of Chemical Engineering	and Inorganic Solids from		
	Waste Water		
Jackson, Daniel F., Ph.D.	Ecology of <u>Cladophora glomerata</u>	WP-00782-01	15,177
Dept. of Civil Engineering	and <u>Cladophora fracta</u>		
Lazaroff, Norman, Ph.D.	Anionic Adaptation of	WP-00769-01	_____*
Microbiological Biochemical Ctr.	Thiobacillus Ferroxidans		
Li, Wen-Hsiung, Ph.D.	Transverse Dispersion of	WP-00575-02	15,500
Dept. of Civil Engineering	Contaminant in Ground Water		
Lundgren, Donald G., Ph.D.	Physiology and Culture of	WP-00548-03	21,497
Dept. of Bacteriology and	Iron-Oxidizing Bacteria		
Botany			
Rand, Myrton C., Ph.D.	Kinetics of Oxidation of	WP-00074-03	15,771
Dept. of Civil Engineering	Sulfites by Dissolved Oxygen		
Tien, Chi, Ph.D.	A Study of the Aeration	WP-00719-01	15,256
Dept. of Chemical Engineering	Process in Non-Newtonian Media		
and Metallurgy			

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<u>NORTH CAROLINA</u>			
<u>Duke University</u> <u>Durham</u>			
Bryan, Edward H., Ph.D. Dept. of Civil Engineering	Biochemical Utilization of Chemically Combined Oxygen	WP-00316-04	\$ 13,827
<u>North Carolina State College</u> <u>Raleigh</u>			
Hayne, Don W., Ph.D. Institute of Statistics	Biometrics of the Study of a Small River	WP-00502-02	_____*
<u>University of North Carolina</u> <u>Chapel Hill</u>			
Lamb, James C., III, Sc.D. Dept. of Environmental Sciences and Engineering	Design Criteria for Final Tanks and Sludge Thickeners	WP-00569-02	19,275
Okun, Daniel A., Sc.D. Dept. of Environmental Sciences and Engineering	Oxygen in Waste Treatment	WP-00131-10	13,643
Weiss, Charles M., Ph.D. Dept. of Environmental Sciences and Engineering	Direct Gas Chromatography of Organics in Water	WP-00563-02	10,590
Weiss, Charles M., Ph.D. Dept. of Sanitary Engineering	Use of Fish to Detect Organic Insecticides in Water	WP-00010-07	_____*
Wicker, Warren J. Institute of Government	Arrangements for Water Sources in Selected North Carolina Areas	WP-00352-03 WP-00352-03S1	_____ _____*
<u>NORTH DAKOTA</u>			
<u>North Dakota State Dept.</u> <u>of Health</u> <u>Grand Forks</u>			
Gustafson, Arthur A. Public Health Laboratory	A Study of the Bacterial and Viral Flora of Sewage Lagoons (Oxidation Ponds)	WP-00058-03	_____*
<u>OHIO</u>			
<u>Case Institute of Technology</u> <u>Cleveland</u>			
Sparks, Robert E., Ph.D. Division of Engineering	Emulsion Breaking by Coalescence on Adsorbed Films	WP-00854-01	26,912
<u>Kenyon College</u> <u>Gambier</u>			
Pappenhagen, James M., Ph.D. Dept. of Chemistry	Determination of Ions in Wastes and Waters	WP-00137-10	8,160

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>OHIO (cont.)</u>			
<u>The Ohio State University</u> <u>Research Foundation</u> <u>Columbus</u>			
Dugan, Patrick R., Ph.D. Dept. of Microbiology	Fish Susceptibility to Pesticides and Detergents	WP-00793-01	\$ 2,887
Randles, Chester I., Ph.D. Dept. of Microbiology	Aquatic Bacteria Related to Acid-Mine Drainage	WP-00147-10	9,009
Smith, Edwin E., Ph.D. Dept. of Chemical Engineering	Study of the Sulfide-to- Sulfate Reaction Mechanism	WP-00340-04	21,942
Taft, Clarence E., Ph.D. Dept. of Botany and Plant Pathology	The Diatoms of the West End of Lake Erie	WP-00317-04	11,939
<u>University of Cincinnati</u> <u>Cincinnati</u>			
Eye, J. David Dept. of Civil Engineering	Field Evaluation of Extended Aeration Plants	WP-00693-01	32,400
Eye, J. David Dept. of Sanitary Engineering	Trickling Filter Effluent Quality Control by O. R. P.	WP-00065-03	_____*
Lemlich, Robert, Ph.D. Dept. of Chemical Engineering	Foam Fractionation with Reflux	WP-00161-06	9,782
Lemlich, Robert, Ph.D. Dept. of Chemical Engineering	Non-Foaming Bubble Fractionation	WP-00814-01	9,691
Mancy, Khalil H., Ph.D. Dept. of Civil Engineering	Dissolved Oxygen Determination in Natural and Wastewater	WP-00566-02	11,580
Scarpino, Pasquale V., Ph.D. Dept. of Civil Engineering	Factors Influencing Survival of Bacteria in Sea Water	WP-00844-01	18,984
<u>OKLAHOMA</u>			
<u>Oklahoma State University</u> <u>Stillwater</u>			
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Kinetics and Mechanism in Activated Sludge Processes	WP-00325-03	19,314
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Metabolic Control Mechanisms in Biological Treatment	WP-00786-01	26,332
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Response of Activated Sludge to Organic Shock Loads	WP-00075-04	28,836
<u>University of Oklahoma</u> <u>Research Institute</u> <u>Norman</u>			
Klehr, Edwin H., Ph.D. Civil Engineering and Environmental Science Dept.	Mixed Resin Sampler Kit for Analysis of Polluted Water	WP-00373-02	11,568

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<u>OREGON</u>			
<u>Oregon State University</u>			
<u>Corvallis</u>			
Bond, Carl E., Ph.D. Dept. of Fisheries and Wild Life	Relations of Nuisance Algae to Fishes in Klamath Lake	WP-00625-02	\$ 15,348
Burgess, Frederick J. Dept. of Civil Engineering	Waste Water Lagoon Criteria for Maritime Climates	WP-00185-05	_____*
Burgess, Frederick J. Dept. of Civil Engineering	Pulp Mill Waste Degradation in Marine Waters	WP-00524-02	26,665
Castle, Emery N., Ph.D. Agricultural Economics Dept.	Economic Evaluation of Water Pollution Control	WP-00107-03 WP-00107-03S1	14,999 15,180
Freed, Virgil H., Ph.D. Dept. of Agriculture Chemistry	Chemical Brush Control Biochemistry and Toxic Hazard	WP-00477-03	24,726
Hall, James D., Ph.D. Dept. of Fisheries and Wild Life	Studies on Effects of Watershed Practices on Streams	WP-00423-03	21,685
Harward, Moyle E., Ph.D. Dept. of Soils	Location of Charge and Chemical Properties of Clay	WP-00097-03	_____*
Marvell, Elliot N., Ph.D. Dept. of Chemistry	Components of Kraft Mill Wastes and Their Toxicities	WP-00079-08	9,456
Morita, Richard Y., Ph.D. Dept. of Microbiology	Study of Beggiatoa Species	WP-00443-03	_____*
Phinney, Harry K., Ph.D. Dept. of Botany	The Autecology of Some Blue- Green Plankton Algae	WP-00666-01	24,879
Pritchard, Austin W., Ph.D. Dept. of Zoology	Acclimation of Fish to Pollution-Related Low Oxygen	WP-00493-02	6,892
Schroeder, Herbert A., Sc.D. Forest Research Laboratory	Lignin Sulfonates in Pulp Mill Effluents	WP-00823-01	19,622
Seaders, John Dept. of Civil Engineering	Factors Influencing Stream Temperatures	WP-00684-02	15,135
Warren, Charles E., Ph.D. Dept. of Fish and Game Management	The Influence of Dissolved Oxygen on Fresh-Water Fishes	WP-00135-10	13,097
Warren, Charles E., Ph.D. Dept. of Fish and Game Management	Ecological Studies of an Experimental Stream	WP-00157-07	32,584
<u>Portland State College</u>			
<u>Portland</u>			
Ferguson, James W., Ph.D. Dept. of Chemistry	Water Pollutants Determinable by Gas Chromatography	WP-00063-03	_____*

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>PENNSYLVANIA</u>			
<u>Academy of Natural Sciences</u> <u>Philadelphia</u>			
Patrick, Ruth, Ph.D. Dept. of Limnology	The Effects of Specific Chemicals on Diatom Populations	WP-00475-02 WP-00475-02S1	\$ 16,523 8,764
<u>Carnegie Institute of Technology</u> <u>Pittsburgh</u>			
Bugliarello, George Sc.D. Civil Engineering Dept.	A Synthetic Computer Language for Sanitary Engineering	WP-00415-03	25,284
<u>Drexel Institute of Technology</u> <u>Philadelphia</u>			
Remson, Irwin, Ph.D. Dept. of Civil Engineering and Mechanics	Research on Underground Movement of Rain Water	WP-00384-02	_____*
<u>Pennsylvania Military College</u> <u>Chester</u>			
Wise, Donald L. Dept. of Engineering	Diffusion Coefficients of Gases in Water	WP-00671-01A1	13,907
<u>Pennsylvania State University</u> <u>University Park</u>			
Levell, Harold L., Ph.D. Dept. of Mineral Preparation	Sewage Effluent Purification by Interfacial Phenomena	WP-00424-03	25,163
<u>Swarthmore College</u> <u>Swarthmore</u>			
Mangelsdorf, Paul C., Ph.D. Dept. of Physics	Long Salt-Bridge Methods and Liquid Junctions	WP-00460-02	_____*
<u>University of Pittsburgh</u> <u>Pittsburgh</u>			
Cummins, Kenneth W., Ph.D. Dept. of Biology	The Microdistribution of Stream Benthos (Symposium)	WP-00763-01	_____*
Cummins, Kenneth W., Ph.D. Dept. of Biology	The Microdistribution of Stream Benthos	WP-00525-02	12,757
Shapiro, Maurice A., Ph.D. Dept. of Public Health Practices	Determination of Organic Matter in Water	WP-00473-03	17,122
<u>RHODE ISLAND</u>			
<u>University of Rhode Island</u> <u>Kingston</u>			
Conover, John T., Ph.D. Dept. of Biological Oceanography	The Effects of Pollution on Benthic Marine Plant Communities	WP-00755-01	20,745

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>RHODE ISLAND (cont.)</u>			
<u>University of Rhode Island</u> <u>Kingston</u>			
DeLuise, Frank J. Div. of Engineering Research and Development	Thermodynamics and Kinetics in Anaerobic Digestion	WP-00200-03	_____*
Fish, Charles J., Ph.D. Graduate School of Oceanography	Environmental Relationships of Benthos in Salt Ponds	WP-00023-05	_____*
Sieburth, John M., Ph.D. Graduate School of Oceanography	Production of Pro- and Anti- bacterials by Marine Algae	WP-00100-04	\$ 19,325
<u>SOUTH CAROLINA</u>			
<u>Clemson University</u> <u>Clemson</u>			
Andrews, John F., Ph.D. Dept. of Civil Engineering	Growth Characteristics of the Methane Bacteria	WP-00622-02	18,168
<u>University of South Carolina</u> <u>Columbia</u>			
Davis, Milton W., Jr., Ph.D. Dept. of Chemical Engineering	Purification of Industrial Wastes by Ion Exchange	WP-00595-01A1	26,120
Nelson, Bruce W., Ph.D. Dept. of Geology	Chemical Exchanges Across Sediment-Water Interfaces	WP-00651-02	41,780
<u>SOUTH DAKOTA</u>			
<u>South Dakota School of Mines</u> <u>and Technology</u> <u>Rapid City</u>			
Smith, Ross W. Dept. of Metallurgy	Adsorption of Surfactants on Selected Minerals	WP-00611-02	17,284
<u>TENNESSEE</u>			
<u>Vanderbilt University</u> <u>Nashville</u>			
Fisher, Gerald T., Ph.D. Dept. of Chemical Engineering	Oxygen Absorption in Organic- Aqueous Mixtures	WP-00871-01	13,320
Krenkel, Peter A., Ph.D. Civil Engineering Department	Turbulent Diffusion and River Waste Assimilative Capacity	WP-00328-04	28,740
Webb, M. Roger Civil Engineering Dept.	Determination of Transition Zones in Settling Basins	WP-00039-04	7,200
<u>TEXAS</u>			
<u>Baylor University</u> <u>Waco</u>			
Davidson, Floyd F., Ph.D. Biology Dept.	Toxic Properties of the Blue-Green Algae	WP-00002-10	5,283

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<u>TEXAS (cont.)</u>			
<u>Lubbock City-County Health Dept.</u>			
<u>Lubbock</u>			
Cowgill, David M., M.D. City Health Dept.	Multipurpose Modification of Playa Sinks	WP-00029-04 WP-00029-04S1	\$ 16,500 1,389
<u>North Tex State University</u>			
<u>Denton</u>			
Schlichting, Harold, Jr., Ph.D. Dept. of Biology	The Effects of Domestic Pollution Upon Periphyton	WP-00604-02 WP-00604-02S1	460 1,000
Silvey, Joseph K. G., Ph.D. Dept. of Biology	Metabolism of the Aquatic Actinomycetes	WP-00805-01	18,830
Silvey, Joseph K. G., Ph.D. Dept. of Biology	Naturally Occurring Tastes and Odors in Water Supplies	WP-00785-01	18,813
<u>Texas A & M Research Foundation</u>			
<u>College Station</u>			
Ray, Sammy M., Ph.D. Dept. of Oceanography and Meteorology	Conference on Pollution and Marine Ecology	WP-00900-01	31,550
<u>Texas A & M University</u>			
<u>College Station</u>			
Smerdon, Ernest T., Ph.D. Agricultural Engineering Dept.	Water Pollution from Eroded Sediments	WP-00757-01	28,484
<u>Texas Research Foundation</u>			
<u>Renner</u>			
Correll, Donovan S., Ph.D. Botanical Laboratory	Aquatic Plants of Polluted Waters in the S. W. United States	WP-00685-01 WP-00685-01S1	28,020 1,644
<u>The University of Texas</u>			
<u>Austin</u>			
Gloyna, Earnest F., Dr. Engr. Dept. of Civil Engineering	Effect of Toxic Organics on Waste Stabilization	WP-00688-01A1	12,658
Himmelblau, David M., Ph.D. Dept. of Chemical Engineering	Gas Transport Through Monolayers on Reservoirs	WP-00652-02	12,390
Malina, Joseph F., Jr., Ph.D. Dept. of Civil Engineering	Amino Acid Formation in Anaerobic Sludge Digestion	WP-00083-03	10,434
Parker, Patrick L., Ph.D. Institute of Marine Science	Metabolism of Marine Bays of Texas	WP-00204-04	_____*
<u>UTAH</u>			
<u>University of Utah</u>			
<u>Salt Lake City</u>			
Gauvin, Arden R., Ph.D. Dept. of Zoology and Entomology	Toxicity of Pesticides to Aquatic Invertebrates	WP-00003-10	14,669

*Active 1965 - Supported by funds awarded in 1964

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>UTAH (cont.)</u>			
<u>University of Utah</u> <u>Salt Lake City</u>			
Gaufin, Arden R., Ph.D. Dept. of Zoology and Entomology	Production of Taste and Odor Producing Algae in Reservoirs	WP-00334-04	\$ 6,790
Rees, Don M., Ph.D. Division of Biological Sciences	Multipurpose Management Techniques for Reusable Water	WP-00027-04	18,083
<u>Utah State University</u> <u>Logan</u>			
Neuhold, John M., Ph.D. Dept. of Wildlife Resources	Halide Water Quality Toxicity Effects on Fish	WP-00768-01	12,557
<u>VIRGINIA</u>			
<u>Virginia Institute of Marine</u> <u>Science</u> <u>Gloucester Point</u>			
Brehmer, Morris L., Ph.D. Ecology-Pollution Dept.	Toxicity of Industrial Wastes to Marine Organisms	WP-00035-03	16,192
<u>Virginia Polytechnic Institute</u> <u>Blacksburg</u>			
Brandt, Warren W., Ph.D. Dept. of Chemistry	Determination of Synthetic Detergents	WP-00647-02	7,721
Murphy, Nelson F., Ph.D. Dept. of Chemical Engineering	Removal of Color from Sulfate Pulp Wash Liquors	WP-00085-01	_____*
<u>WASHINGTON</u>			
<u>University of Washington</u> <u>Seattle</u>			
Banse, Karl, Ph.D. Dept. of Oceanography	Annual Phytoplankton Production in Puget Sound Waters	WP-00633-02	35,694
Bevan, Donald E., Ph.D. Fisheries Research Institute	Estuarine Ecology As Related to Water Pollution	WP-00642-01A1	79,256
Carlson, Dale A., Ph.D. Dept. of Civil Engineering	Amino Acid Utilization in Activated Sludge	WP-00247-03	_____*
Christman, Russell F., Ph.D. Dept. of Civil Engineering	The Nature of Organic Color in Water	WP-00558-02 WP-00558-02S1	11,688 1,116
English, Thomas S., Ph.D. Dept. of Oceanography	Distribution of Demersal Fishes in Inshore Waters	WP-00803-01	42,255
Gessell, Stanley P., Ph.D. Dept. of Forestry	Influence of Forest Ecosystems on Water Quality	WP-00743-01	17,434

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>WASHINGTON (cont.)</u>			
<u>University of Washington</u> <u>Seattle</u>			
McCarthy, Joseph L., Ph.D. Dept. of Chemical Engineering	Studies of Low Molecular Weight Lignin Sulfonates	WP-00628-01	\$ 15,200
McCarthy, Joseph L., Ph.D. Dept. of Chemical Engineering	Unique Determination of Lignin Sulfonates in Water	WP-00627-02	14,400
Nece, Ronald E., Sc.D. Hydraulics Laboratory	Salt Water Entrainment for Dilution in Sewer Outfalls	WP-00512-02	13,524
Scott, David R., Ph.D. Dept. of Forestry	Transpirational Use of Water by High Altitude Forests	WP-00720-01	19,912
<u>Washington State University</u> <u>Pullman</u>			
Hindin, Ervin Div. of Industrial Research	Occurrence of Pesticides in Aquatic Environments	WP-00676-02	29,010
Hindin, Ervin Div. of Industrial Research	Water Reclamation by Reverse Osmosis	WP-00624-02	13,418
May, Donald S. Div. of Industrial Research	The Ecology of Chromatium in Sewage Ponds	WP-00727-01	18,708
Parker, Richard A., Ph.D. Dept. of Zoology and Computing Center	Some Aspects of Microcrustacean Phosphate Metabolism	WP-00903-04	11,400
Stahl, John B., Ph.D. Div. of Industrial Research	The Effects of the Benthos on Decomposition	WP-00668-01A1	14,192
Stokes, J. L., Ph.D. Dept. of Bacteriology and Public Health	The Biology and Chemistry of Sphaerotilus	WP-00239-03	19,812
<u>WEST VIRGINIA</u>			
<u>West Virginia University</u> <u>Morgantown</u>			
Gerencser, Vincent F., Ph.D. Dept. of Microbiology	Studies on Aquatic Stalked Bacteria	WP-00616-01S1 WP-00616-02	6,858 12,316
Wen, C. Y., Ph.D. Dept. of Chemical Engineering	Mass Transfer and Chemical Reaction in Water Pollution	WP-00699-01	19,103
<u>WISCONSIN</u>			
<u>University of Wisconsin</u> <u>Madison</u>			
Blum, John L., Ph.D. Dept. of Botany	Response of Tolerant Organisms to Specific Pollutants	WP-00857-01	13,926

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>WISCONSIN (Cont.)</u>			
<u>University of Wisconsin</u> <u>Madison</u>			
Chesters, Gordon, Ph.D. Soils Dept.	Herbicide Removal Processes in Soil	WP-00751-01	39,430
Fitzgerald, George P., Ph.D. Hydraulic and Sanitary Lab.	Detection of Limiting or Surplus Nutrients in Algae	WP-00297-04	23,038
Hasler, Arthur D., Ph.D. Dept. of Zoology	Vitamin B ₁₂ in Lakes and Its Ecological Significance	WP-00236-03	_____*
Hilsenhoff, William L. Dept. of Entomology	Biological Factors in the Management of Lake Flies	WP-00209-04A1	_____*
Lee, G. Fred, Ph.D. Hydraulic and Sanitary Lab.	Concentration of Organic Solutes in Water	WP-00371-01A1	30,903
Rohlich, Gerard A., Ph.D. Dept. of Civil Engineering	Glucose Utilization by Pure and Mixed Cultures	WP-00061-03	_____*
Villemonte, James R., Ph.D. Dept. of Civil Engineering	Hydraulic Characteristics of Circular Sedimentation Basins	WP-00183-06	15,480
Weckel, Kenneth G., Ph.D. Dept. of Dairy & Food Indust.	Cannery In-Plant Waste Losses and Their Control	WP-00535-02	16,524
<u>FOREIGN</u>			
<u>AUSTRALIA</u>			
<u>Melbourne Water Science Institute</u> <u>Melbourne</u>			
Parker, Cecil D. Director	Function of Solids in Lagoon Treatment of Sewage	WP-00321-03	14,105
<u>CANADA</u>			
<u>University of British Columbia</u> <u>Vancouver</u>			
Walden, Cecil C., Ph.D. Division of Applied Biology	Studies on Acidophilic Chemoautotrophic Bacteria	WP-00550-03	19,580
<u>GREAT BRITAIN</u>			
<u>The University of Liverpool</u> <u>Liverpool</u>			
Brinkhurst, Ralph O., Ph.D. Dept. of Zoology	Taxonomy and Biology of Tubificidae (Sludge Worms)	WP-00521-02	6,200
<u>JAPAN</u>			
<u>Okayama University</u> <u>Okayama City</u>			
Kobayashi, Jun, Sc.D. Ohara Inst. Agr. Biology	Osteomalacia by Pollution from Cadmium Mining	WP-00359-03	7,440

WATER POLLUTION CONTROL
RESEARCH FELLOWSHIPS FISCAL YEAR 1965
SUMMARY OF AWARDS BY STATES

State	Institutions and Agencies	Number Awarded	Amount Awarded
Arizona	1	1	\$ 6,675
California	5	11	65,238
Colorado	2	4	23,661
Georgia	2	4	24,216
Idaho	1	1	5,850
Illinois	1	3	20,700
Indiana	1	1	3,750
Iowa	2	4	26,600
Kentucky	1	1	5,600
Maryland	2	1	6,974
Massachusetts	2	2	7,800
Michigan	3	1	64,336
Missouri	2	4	28,221
New Mexico	1	1	7,300
New York	3	4	26,500
North Carolina	1	2	13,400
Ohio	1	1	3,690
Oklahoma	2	4	24,600
Oregon	1	3	20,422
Pennsylvania	2	2	11,400
Rhode Island	1	1	10,645
South Carolina	2	2	11,500
Tennessee	1	1	7,600
Texas	2	2	10,900
Utah	2	7	44,400
Virginia	1	4	24,400
Washington	1	3	19,475
Wisconsin	1	11	59,845
Foreign	4	5	31,017
28 States	51	101	\$616,715

Active Research Fellowships 1965

28 States, 4 Foreign Countries
101 Institutions and Agencies
145 Research Fellowships

WATER POLLUTION CONTROL
RESEARCH FELLOWSHIPS
FISCAL YEAR 1965

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>ARIZONA</u>			
<u>University of Arizona</u> <u>Tucson</u>			
Dea, Stanley J. Dept. of Civil Engineering	Continuous High Rate Loadings of Anaerobic Sludge Digestors	F1-WP-20,356-02	\$ 6,675
<u>CALIFORNIA</u>			
<u>California Institute</u> <u>of Technology</u> <u>Pasadena</u>			
Collins, Ralph P. Dept. of Biology	Chemical Substances Produced By Taste and Odor Microorganisms	F3-WP-24,122-01	4,547
<u>San Jose State College</u> <u>San Jose</u>			
Falk, Pelley A. Dept. of Civil Engineering and Applied Mechanics	Hydraulic Characteristics of Ion Exchange Columns	F1-WP-22,285-02	2,750
Greenlee, Clifford A. Dept. of Civil Engineering and Applied Mechanics	Mixing Characteristics of Chlorine Injection in Sewage Carrying Channels	F1-WP-22,286-02	2,542
<u>Stanford University</u> <u>Stanford</u>			
Bruch, John C. Dept. of Civil Engineering	The Dispersion of Pollutants in Flow Through Porous Media	F1-WP-21,610-02	5,100
Hill, David W. Dept. of Civil Engineering	Pesticide Distribution and Degradation in Waterways	5F1-WP-20,280-03	6,600
Huff, Dale Dept. of Civil Engineering	Rainfall Deposition of Radioactive Fallout in Water Supplies	1F1-WP-26,022-01A1	5,600
Linstedt, Kermit D. Dept. of Civil Engineering	Trace Elements in Water Supplies and Treatment Plants	F1-WP-22,084	5,600
O'Rourke, James T. Dept. of Civil Engineering	Metabolic Pathways of Anaerobic Biodegradation	1F1-WP-26,010-01A1	7,600

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>CALIFORNIA</u>			
<u>Stanford University</u> <u>Stanford</u>			
Stratton, Frank E. Dept. of Civil Engineering	Removal of Nitrogen from Secondary Sewage Plant Effluents	F1-WP-20,354-02	_____*
Tchobanoglous, George Dept. of Civil Engineering	Spray Irrigation as a Means of Effluent Disposal	F1-WP-22,439-02	7,100
<u>University of California</u> <u>Berkeley</u>			
Bruvold, William H. School of Public Health	Study of Limits for Total Solids in Water	F3-WP-16,452-03	9,999 500**
<u>University of California</u> <u>Davis</u>			
Carlson, John S. Dept. of Zoology	Effects of Micro-Nutrients on Primary Production Organisms	F1-WP-21,612-03	7,300
<u>COLORADO</u>			
<u>Colorado State University</u> <u>Fort Collins</u>			
Bittinger, Morton W. Dept. of Civil Engineering	Water Resources Management	1F3-WP-23,699-01	4,750 500**
Fair, Jerrell F. Dept. of Pathology and Microbiology	The Influence of Environmental Factors Upon Water Quality	F1-WP-22,544-02	4,700
Hendricks, Charles W. Dept. of Pathology and Microbiology	The Growth and Multiplication of Pathogenic Enteric Bacteria in Mountain River Water	F1-WP-22,545-02	6,100
<u>University of Colorado</u> <u>Boulder</u>			
Bryce, George W., Jr. Dept. of Biology	Distribution and Ecology of Colorado Mollusks	F1-WP-24,810-01	_____*
LaVelle, James W. Dept. of Biology	Primary Productivity of the Arkansas River in the Vicinity of Pueblo, Colorado	1F1-WP-26,101-01	7,611
<u>GEORGIA</u>			
<u>Georgia Institute of</u> <u>Technology</u> <u>Atlanta</u>			
Marschall, Stuart B. Dept. of Sanitary Engineering	Organic Acid Accumulations during Retarded Digestion	F1-WP-24,448-01	5,400

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>GEORGIA (cont'd)</u>			
<u>Georgia Institute of Technology</u> <u>Atlanta</u>			
Mullins, Bert C. Dept. of Civil Engineering	Development of Probabilistic Estimate of Streamflow Regimes	F1-WP-24,383-01	\$ 8,116
<u>University of Georgia</u> <u>Athens</u>			
Mayberry, William R. Dept. of Bacteriology	Biodegradation of Synthetic Detergents	F1-WP-21,658-02	5,100
Todd, Russell L. Dept. of Bacteriology	Bacterial Decomposition of Detergents in Sewage	F1-WP-21,402-02	5,600
<u>IDAHO</u>			
<u>University of Idaho</u> <u>Moscow</u>			
Smith, Stamford D. Dept. of Entomology	Faunal and Ecological Studies in the Trichoptera of Idaho	5F1-WP-26,026-02	5,850
<u>ILLINOIS</u>			
<u>University of Illinois</u> <u>Urbana</u>			
Dick, Richard I. Dept. of Civil Engineering	Biological Aspects of Water Pollution Control	F1-WP-21,613-02	7,300
Hall, Millard W. Dept. of Sanitary Engineering	Inorganic Phosphorus Removal by the Activated Sludge Process	F1-WP-21,616-02	6,600
Lefke, Louis W. Dept. of Civil Engineering	Liquifaction of Insoluble Organic Compounds in Anaerobic Digestion	F1-WP-24,562-01	_____*
Patton, Thomas H., Jr. Dept. of Sanitary Engineering	Fundamental Enzymatic Processes of Anaerobic Digestion	F1-WP-16,460-02	_____*
Pershe, Edward R. Dept. of Civil Engineering	The Effects of pH on the Performance of Contact Stabilization Processes Under Shock Conditions	F1-WP-21,618-02	6,800
<u>INDIANA</u>			
<u>Purdue University</u> <u>Lafayette</u>			
Schaumburg, Frank D. Dept. of Sanitary Engineering	Anaerobic Digestion Research	F1-WP-22,348-01	600**

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>INDIANA (cont'd.)</u>			
<u>Purdue University</u> <u>West Lafayette</u>			
Woodard, Franklin E. Dept. of Sanitary Engineering	Coacervation and Chemical Coagulation of Lignin from Pulp Mill Black Liquor	5F1-WP-16,465-03	\$ 3,150
<u>IOWA</u>			
<u>Iowa State University</u> <u>Ames</u>			
Burns, Donald E. Dept. of Civil Engineering	Removal of Particulate Matter on Coated Filter Media	F1-WP-26,003-01	_____*
Hermanson, Ronald E. Dept. of Agricultural Engineering	Groundwater Pollution Potential from Land Disposal and Lagooning of Farm Wastes	F1-WP-23,671-01	6,600
Dillingham, James H. Dept. of Civil Engineering	Computer Applications in Water Filtration Plant Design	5F1-WP-20,084-03	6,800
Fox, Martin D. Dept. of Sanitary Engineering	Sand Filtration Research	F1-WP-23,211-01	_____*
Merideth, Kenneth C. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-24,554-01	_____*
Merry, Kenneth J. Dept. of Civil Engineering	Tertiary Treatment by Rapid Sand Filters	5F1-WP-23,003-02	7,100
Stoermer, Eugene F. Dept. of Botany and Plant Pathology	Ecology of Diatoms in Hardwater Habitats	F2-WP-20,477-02	500**
<u>State University of Iowa</u> <u>Iowa City</u>			
Hendricks, David W. Dept. of Sanitary Engineering	Adsorption, Desorption, and Ion Exchange in Ground Water Flow	F1-WP-24,125-01	_____*
Paulson, Wayne L. Dept. of Sanitary Engineering	Biological Utilization of Hydrolyzed Cell End-Products	F1-WP-20,353-02	_____*
Teasdale, John D. Dept. of Civil Engineering	Virus Movement Through Porous Media	F1-WP-22,430-01A1	5,600
<u>KANSAS</u>			
<u>University of Kansas</u> <u>Lawrence</u>			
Burkhead, Carl E. Dept. of Civil Engineering	Energy Relationships in Aerobic Metabolism	F1-WP-21,611-02	_____*

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>KANSAS</u> (cont'd.)			
<u>University of Kansas</u> <u>Lawrence</u>			
Stukenberg, John R. Dept. of Civil Engineering	Radiotracer Studies of Endogenous Metabolism	F1-WP-24,278-01	_____*
<u>KENTUCKY</u>			
<u>University of Kentucky</u> <u>Lexington</u>			
Mills, Kermit C. Dept. of Agricultural Engineering	Effects of Steer Rations on Biological Stabilization Rates	F1-WP-22,429-01	_____*
<u>University of Louisville</u> <u>Louisville</u>			
Greeson, Phillip E. Dept. of Biology	The Major Sources of Dissolved Oxygen in the Aquatic Environment	1F1-WP-26,056-01	5,600
<u>MARYLAND</u>			
<u>Johns Hopkins University</u> <u>Baltimore</u>			
Schubel, Jerry R. Dept. of Oceanography	Sedimentation and Mineral Assemblages in Estuaries	F1-WP-23,785-01	_____*
Warriner, Thomas R. Dept. of Sanitary Engineering	Studies of the Effects of Sewage Treatment on the Survival of Pathogens	F1-WP-16,922-03	5,300
<u>University of Maryland</u> <u>College Park</u>			
McErlean, Andrew J. Dept. of Zoology	Heat Stress and Thyroidal Relation in <u>Roccus Americanus</u>	F3-WP-24,146-01	1,174 500**
<u>MASSACHUSETTS</u>			
<u>Harvard University</u> <u>Cambridge</u>			
Hernandez, John W. Dept. of Engineering and Applied Physics	Evaluation of Mass Transport in the Activated Sludge Process	5F1-WP-14,061-04	2,900
<u>Massachusetts Institute of</u> <u>Technology</u> <u>Cambridge</u>			
Clark, Robert C., Jr. Dept. of Geology and Geophysics	Hydrocarbons in the Marine Environment	F1-WP-24,325-01	4,900

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>MASSACHUSETTS (cont.)</u>			
<u>Massachusetts Institute of Technology</u> <u>Cambridge</u>			
Tenney, Mark W. Dept. of Civil Engineering	Synthesis in Activated Sludge	F1-WP-9,710-04	_____*
<u>MICHIGAN</u>			
<u>Central Michigan University</u> <u>Mt. Pleasant</u>			
Houston, William A. Dept. of Biology	Studies of the Phytoplankton of Torch, Skegemog, and Elk Lakes	F1-WP-26,032-01	\$ 5,400
Kontio, Arthur L. Dept. of Biology	Taxonomic Key for Chironomidae Larvae by Cytologic Distinction of Salivary Glands	5F1-WP-23,238-02	5,600
<u>Michigan State University</u> <u>East Lansing</u>			
Bahr, Thomas G. Dept. of Fisheries and Wildlife	Effects of Sub-Lethal Pesticide Stress Upon Differential Tissue Destruction in Fish	5F1-WP-26,004-02	5,600
Sohacki, Leonard P. Dept. of Fisheries and Wildlife	Movement of Sodium Arsenite in a Pond Ecosystem	1F1-WP-25,711-01	6,600
<u>Michigan State University</u> <u>Lansing</u>			
Bouch, Gerald R. Dept. of Fisheries and Wildlife	Investigation of Stress-Induced Changes in Serum Proteins	F1-WP-15,782-03	_____*
Garton, Ronald R. Dept. of Fisheries and Wildlife	Effects of Sub-acute Metallic Ion Pollution on Ecology	5F1-WP-26,008-02	5,600
Kullberg, Russell G. Dept. of Botany and Plant Pathology	Factors Affecting Distribution of Algae in Six Thermal Streams of Western Montana	F1-WP-19,590-02	_____*
Lenon, Herbert L. Dept. of Fisheries and Wildlife	Transfer of the Insecticide Dieldrin Through Trophic Levels	1F1-WP-29,109-01	5,600
Linton, Kenneth J. Dept. of Fisheries and Wildlife	Electrophoretic Analysis of Serum Proteins as an Indicator of Pollution	4F1-WP-15,866-04	3,650

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>MICHIGAN</u>			
<u>University of Michigan</u> <u>Ann Arbor</u>			
Echelberger, Franklin, Jr. Dept. of Civil Engineering	Algal Culture Research Applied to Waste Treatment	F1-WP-12,517-03	_____*
Foess, Gerald W. Dept. of Civil Engineering	Water Pollution Control and Sanitary Engineering	F1-WP-26,036-01	\$ 4,900
Hirota, Dennis I. Dept. of Civil Engineering	Research Problem to be Selected	1F1-WP-26,095-01	5,100
Keinath, Thomas M. Dept. of Civil Engineering	Kinetics of Adsorption in Waste Treatment	F1-WP-24,505-01	_____*
Pyper, Gordon R. Dept. of Civil Engineering	Research Problem to be Selected	F1-WP-21,207-01	_____*
Robohn, Walter F. Dept. of Environmental Health	Water Resources Allocation in the Neosho Grand Basin	F3-WP-16,345-02	11,186
Schenk, John E. Dept. of Sanitary Engineering	Sanitary Engineering Waste Treatment	F1-WP-26,034-01	5,100
<u>MISSOURI</u>			
<u>University of Missouri</u> <u>Columbia</u>			
Hemphill, Louis Dept. of Civil Engineering	Application of Thermal Techniques for Detecting Organic Pollution	F1-WP-26,007-01	_____*
Lind, Owen T. Dept. of Zoology	Productivity Measurements in Lakes Recovering from Acid Pollution	5F1-WP-22,892-02	6,800
<u>Washington University</u> <u>St. Louis</u>			
Brower, George R. Dept. of Environmental and Sanitary Engineering	Degradation of Organic Pesticides in Water	5F1-WP-21,609-03	6,300
Buzzell, James C., Jr. Dept. of Environmental and Sanitary Engineering	Chemical Oxidation of Trace Organics in Water	F1-WP-22,366-02	7,800
Young, Reginald Hung Fo Dept. of Environmental and Sanitary Engineering	Chemical Degradation of Pesticides in Water Treatment-Environmental and Sanitary Engineering Program	F1-WP-26,027-01	7,321

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>NEW HAMPSHIRE</u>			
<u>Dartmouth College</u> <u>Hanover</u>			
Drobney, Neil L. Dept. of Civil Engineering	Sewage Treatment in the Polar Regions	F1-WP-21,614-01	_____*
<u>NEW MEXICO</u>			
<u>New Mexico State University</u> <u>University Park</u>			
O'Brien, Walter J. Dept. of Civil Engineering	Continuous Biochemical Monitoring of Some Organic Wastes	F1-WP-22,185-02	\$ 7,300
<u>NEW YORK</u>			
<u>Cornell University</u> <u>Ithaca</u>			
Kirby, William H. Dept. of Sanitary Engineering	Research Problem to be Selected	F1-WP-24,561-01	_____*
Liebman, Jon C. Dept. of Sanitary Engineering	Systems Analysis of a Water Resource Basin	F1-WP-20,553-01A1	7,300
Maier, Walter J. Dept. of Sanitary Engineering	Mass Transfer and Biological Oxidation Kinetics	5F1-WP-24,563-02	7,800
Ragan, Robert M. Dept. of Civil Engineering	Influences of Variations in Channels on Runoff in a River Basin	F1-WP-18,983-01A1	_____*
Ward, Charles R. Dept. of Entomology and Limnology	Ecological Changes in Playas Modified for the Mutual Benefit of Public Health, Agriculture and Wildlife	F1-WP-15,212-03	500**
<u>New York University</u> <u>University Heights</u>			
Bella, David A. Dept. of Civil Engineering	Cationic Effect on Biological Waste Treatment Systems	F1-WP-26,038-01	5,100
Dresnack, Robert Dept. of Civil Engineering	Research Project to be Selected	1F1-WP-25,057-01	5,800
<u>Rensselaer Polytechnic Institute</u> <u>Troy</u>			
Stiefel, Robert C. Dept. of Civil Engineering	Oxygen Transfer and Uptake Rates in a Pure Oxygen Environment	F1-WP-24,565-01	_____*

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**Supply, Travel or Dependent Allowance

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>NORTH CAROLINA</u>			
<u>University of North Carolina</u> <u>Chapel Hill</u>			
Gakstatter, Jack H. Dept. of Environmental Sciences and Engineering	The Accumulation of Chlorinated Hydrocarbons in Fish	F1-WP-21,673-02	\$ 6,600
Henderson, Oliver, Jr. Dept. of Environmental Sciences and Engineering	Organic Productivity of Impounded Waters: Chemical, Physical and Biological Factors	F1-WP-21,608-02	6,800
<u>OHIO</u>			
<u>Ohio State University</u> <u>Columbus</u>			
Kucha, Michael J. School of Law	Law in the Field of Water Quality and Water Resources	F3-WP-26,033-01	3,690
<u>OKLAHOMA</u>			
<u>Oklahoma State University</u> <u>Stillwater</u>			
Baumgardner, Ray K. Dept. of Zoology	Primary Productivity of a Stream Receiving Oil Refinery Effluents	F1-WP-24,517-01	6,800
Ewing, Margaret S. Dept. of Zoology	Plankton Diversity Changes in Organic Enrichment	5F1-WP-21,296-03A1	5,100
Harrel, Richard C. Dept. of Zoology	Crayfish Populations in Streams Receiving Oil Refinery Effluents	F1-WP-23,074-01	_____*
Knudson, Vernie A. Dept. of Zoology	Dehydrogenase Concentration to Estimate a Functioning Biomass	1F1-WP-26,087-01	7,100
Wilhm, Jerry L. Dept. of Zoology	Aquatic Invertebrate Populations in a Stream Receiving Oil Refinery Effluents	F1-WP-23,099-01	_____*
<u>University of Oklahoma</u> <u>Norman</u>			
Davis, Ernst M. Dept. of Civil Engineering	Phosphate Assimilation by Specific Types of Bio- Oxidation Lagoon Algae	F1-WP-25,155-01	5,600
<u>OREGON</u>			
<u>Oregon State University</u> <u>Corvallis</u>			
Holton, Robert Dept. of Oceanography	Radiosensitivity of Marine Organisms	1F1-WP-30,166-01	7,222

*Active 1965 - Supported by funds awarded in 1964

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>OREGON (cont.)</u>			
<u>Oregon State University</u> <u>Corvallis</u>			
Reese, Weldon H. Dept. of Botany	Ecological Studies of an Experimental Stream	1F1-WP-26,043-01	\$ 6,600
Robertson, James M. Dept. of Microbiology	A Physiological, Ecological Study of Sphaerotilus Natans in an Experimental Stream in Microbiology	1F1-WP-26,040-01	6,600
<u>PENNSYLVANIA</u>			
<u>Lehigh University</u> <u>Bethlehem</u>			
Coutant, Charles C. Dept. of Biology	Effect of an Artificial Impoundment on the Microbiology of the Interrupted Stream	F1-WP-20,083-02	— *
Hertz, Eleanor W. Dept. of Biology	Investigation of Metabolic and Cellular Changes in Fish Tissue Cultures due to Toxic Materials such as Cyanide	F1-WP-19,126-03	5,300
<u>Pennsylvania State University</u> <u>University Park</u>			
Eberhardt, William A. Dept. of Civil Engineering	Anaerobic Biological Waste Treatment	F1-WP-26,021-01	6,100
<u>RHODE ISLAND</u>			
<u>University of Rhode Island</u> <u>Kingston</u>			
Busser, John H. Dept. of Biological Oceanography	Investigations Leading to an Index of Pollution in Natural Waters	F3-WP-17,280-03	10,145 500**
<u>SOUTH CAROLINA</u>			
<u>Clemson University</u> <u>Clemson</u>			
Crocker, James D. Dept. of Civil Engineering	Anaerobic Methane Fermentation of Waste	1F1-WP-26,047-01	5,400
Earle, Elias P. Dept. of Chemical Engineering	Rheological-Thermal Properties of a Microbiological Suspension	F1-WP-24,431-01	— *
Kornegay, Billy H. Dept. of Civil Engineering	Investigation of Trickling Filters by Mathematical Models	F1-WP-24,560-01	— *
McClure Thomas D. Dept. of Civil Engineering	Research Problem to be Sele Selected	F1-WP-22,085-01	— *

*Active 1965 - Supported by funds awarded in 1964

**Supply, Travel or Dependent Allowance

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>SOUTH CAROLINA (cont.)</u>			
<u>Clemson University</u> <u>Clemson</u>			
Watson, Jerry E. Dept. of Bacteriology and Civil Engineering	Microbiological Decomposition of Sulfonated Lignin	1F1-WP-25,393-01	\$ 6,100
<u>University of South Carolina</u> <u>Columbia</u>			
Evelt, Jack B. Dept. of Civil Engineering	Evaluation of Waste Assimilation Capacity in a River with Daily Variation in Flow	F1-WP-23,068-01	_____*
Holman, Henry M. Dept. of Civil Engineering	Algae as a Means of Sewage Treatment	F1-WP-22,347-01	_____*
<u>TENNESSEE</u>			
<u>University of Tennessee</u> <u>Knoxville</u>			
Bergquist, Eugene T. Dept. of Botany	Ecological and Morphogenetic Studies of Myriophyllum Spicatum in Tennessee Valley Lakes	5F1-WP-21,877-02	7,600
<u>TEXAS</u>			
<u>Texas Technological College</u> <u>Lubbock</u>			
Forehand, Charles E. Dept. of Horticulture	Insecticide Use and Effects on Insect Populations, Water Contamination, and Playa Lake Beds	5F1-WP-23,235-02	5,600
<u>University of Texas</u> <u>Austin</u>			
Miholits, Ernest M. Dept. of Environmental Health Engineering	Tracer Studies in Amino Acid Metabolism in Anaerobic Digestion	1F1-WP-26,073-01	5,300
<u>UTAH</u>			
<u>University of Utah</u> <u>Salt Lake City</u>			
Gaufin, Richard F. Dept. of Zoology	Uptake of Radioactively Tagged Insecticides by Aquatic Invertebrates	1F1-WP-26,051-01	5,100
Hales, Donald C. Dept. of Zoology	Effects of DDT Upon Stream Bottom Invertebrates	F1-WP-26,025-01	7,600

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>UTAH (cont.)</u>			
<u>University of Utah</u> <u>Salt Lake City</u>			
Jensen, Loren D. Dept. of Zoology and Entomology	Long-term Effects of Organic Insecticides on Stonefly Naiads	F1-WP-26,029-01	\$ 5,800
Knight, Allen W. Dept. of Zoology and Entomology	Ecology of Stoneflies (Plecoptera) of the Gunnison River Drainage	F1-WP-12,746-02	_____*
Merkeley, Wayne B. Dept of Zoology	Evaluation of Nematodes in Rapid Sand Filter of Water Treatment Plant	F1-WP-26,016-01	6,400
Warnick, Stephen L. Dept. of Entomology and Zoology	The Fate of Insecticides in Water	5F1-WP-20,175-03	8,300
<u>Utah State University</u> <u>Logan</u>			
Hassler, Thomas J. Dept. of Wildlife Resources	Effects of Anionic Detergent on Rainbow Trout	WPPM-13,352(02)	_____*
Hilden, Donald A. Dept. of Wildlife Resources	Interaction of Ca and Mg on the Toxicity of the Halides NaF, NaCl, Na, NaBr on Trout	5F1-WP-22,891-02	5,600
Nyquist, David Dept. of Wildlife Resources	Eutrophication Trends of Bear Lake (Idaho-Utah) and Effect on the Distribution and Biological Productivity of Zooplankton	5F1-WP-23,240-02	5,600
<u>VIRGINIA</u>			
<u>Virginia Polytechnic Institute</u> <u>Blacksburg</u>			
Blackwell, Richard L., Jr. Dept. of Civil Engineering	Coagulation of Waste Streams with Solvents	F1-WP-26,019-01	6,400
Harrison, John Dept. of Civil Engineering	Dewatering of Sewage Sludge by Syneresis	F1-WP-21,999-02	5,600
Judkins, Joseph F., Jr. Dept. of Civil Engineering	Crystal Seeding for Control of Sludge Properties	5F1-WP-23,213-02	6,600
Womeldorph, Donald E. Dept. of Statistics	Study of Models to Correct for Particle Size in X-ray Fluorescence Analysis of Multicomponent Mixtures	5F1-WP-23,900-02	5,800

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>WASHINGTON</u>			
<u>University of Washington</u> <u>Seattle</u>			
Pamemat, Mario M. Dept. of Oceanography and Friday Harbor Laboratory	Ecology and Metabolism of Intertidal Sand Flat Bottom Community	F1-WP-23,842-01	_____*
Stockner, John G. Dept. of Zoology	Primary Productivity and Energy Flow in Thermal Communities	1F1-WP-26,042-01	\$ 6,475
Whitmore, Cecil M. Dept. of Fisheries	Insecticide-Induced Changes in Rainbow Trout and Pacific Salmon	1F1-WP-26,041-01	6,600
Woelke, Charles E. College of Fisheries	Bioassay Study of Fertilized Oyster Eggs in the Puget Sound	F1-WP-26,014-01	6,400
<u>WISCONSIN</u>			
<u>University of Wisconsin</u> <u>Madison</u>			
Brezonik, Patrick L. Dept. of Civil Engineering	Chemistry of Nitrogen in Natural Waters	1F1-WP-26,103-01	5,600
Carlson, Robert F. Dept. of Civil Engineering	Development of a Dynamic Model of the Hydrologic Cycle	5F1-WP-24,678-02	3,674
Cole, Jon A. Dept. of Civil Engineering	General Area of Physical Thickening of Sludges from Biological Waste Treatment	1F1-WP-28,270-01	7,100 145**
Doll, Frederick L. Dept. of Civil Engineering	Water Chemistry Program	1F1-WP-26,009-01	459**
Fruh, Erwin G. Dept. of Civil Engineering	Comprehensive Study on Eutrophication of Lakes in the Yahara River Basin	F1-WP-16,455-01 F2-WP-16,455-01	2,415 500**
Knopp, Paul V. Dept. of Hydraulics and Sanitary Laboratory	Unsteady State Conditions and Their Effect on Biological Treatment Processes	F1-WP-25,034-01	6,800 1,548
Mueiler, James A. Dept. of Civil Engineering	Phosphate Removal from Waste Water	F1-WP-24,564-02	6,300
Radke, Rodney O. Dept. of Soils	Adsorption of S-Triazine Herbicides at Soil Colloidal Surfaces	5F1-WP-24,110-02	5,600
Shannon, James E. Dept. of Civil Engineering	Chemistry of Metals in Natural Waters	5F1-WP-26,012-02	1,048

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LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>WISCONSIN (cont.)</u>			
<u>University of Wisconsin</u> <u>Madison</u>			
Spear, Richard D. Dept. of Hydraulic and Sanitary Laboratory	Chemistry of Glycollic Acid in Natural Waters	F1-WP-26,020-01	\$ 5,891
Uttormark, Paul D. Dept. of Civil Engineering	Langmuir Circulation in Lakes	5F1-WP-24,470-02	6,600
Volk, V. Van Dept. of Soils Science	ABS Adsorption as Related to Sesquioxide, Clay and Organic Matter Content of Soils	F1-WP-24,086-01	— *
Walesh, Stuart G. Dept. of Civil Engineering	Surface Water Quality Changes Due to Natural Phenomena	1F1-WP-26,072-01	6,100 65**
<u>FOREIGN</u>			
<u>ENGLAND</u>			
<u>Ministry of Agriculture</u> <u>Lowestoft</u>			
Jones, Albert C. Dept. of Fisheries and Food	Population Dynamics of Mixed-Species Fisheries	1F3-WP-22,546-01	500**
<u>University of Leeds</u> <u>Leeds</u>			
Markham, James J. Dept. of Chemistry	Synergistic Effects of Complexing Agents in Water Purification by Solvent Extraction	1F3-WP-26,091-01	6,560 500**
<u>GERMANY</u>			
<u>Zoologisches Staatsinstitut</u> <u>Hamburg</u>			
Murphy, Donald G. Dept. of Hydrobiology	Studies in the Relationship of Nematodes to Water Pollution	F3-WP-18,939-01	2,700
<u>ISRAEL</u>			
<u>Hebrew University</u> <u>Jerusalem</u>			
Rosen, Milton J. Dept. of Physical Chemistry	Application of Surface Active Agents to Water Supply Problems	1F3-WP-23,055-01 1F3-WP-23,055-01	500** 414**

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**Supply, Travel or Dependent Allowance

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
<u>FOREIGN (cont.)</u>			
<u>NETHERLANDS</u>			
<u>Delft Technological University</u> <u>The Netherlands</u>			
Johnson, Robert L. Dept. of International Course in Hydraulic Engineering	Allocation of Water Resources in Densely Populated Areas	F1-WP-20,352-01	_____*
<u>SWITZERLAND</u>			
<u>Swiss Federal Institute</u> <u>Technology</u> <u>Zurich</u>			
Clesceri, Lenora S. Dept. of Sanitary Engineering	Growth of Nitrifying Bacteria as Related to Microbial Denitrification of Sewage Effluents	5F2-WP-10,712-02	\$ 5,500 500**
Clesceri, Nicholas L. Dept. of Sanitary Engineering	Degradation of Condensed Phosphates During Sewage Treatment and in Receiving Waters	5F2-WP-10,713-02	6,500 500**
<u>WALES</u>			
<u>University of College of Swansea</u> <u>Swansea</u>			
Swilley, Eugene L. Dept. of Chemical Engineering	Transport Phenomena in Biochemical Oxidation Systems Numerical and Physical Models	F2-WP-24,131-01A1	6,843

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**Supply, Travel or Dependent Allowance

WATER POLLUTION CONTROL
TRAINING GRANTS FISCAL YEAR 1965
SUMMARY OF GRANT AWARDS BY STATES

State	Institutions and Agencies	Number Awarded	Amount Awarded
Arkansas	1	1	\$ 22,738
California	3	4	140,807
Georgia	1	1	34,724
Hawaii	1	1	35,000
Indiana	1	1	23,317
Iowa	1	1	25,077
Kansas	1	1	46,328
Kentucky	1	1	26,120
Maine	1	1	35,960
Maryland	1	1	32,872
Massachusetts	2	2	58,720
Michigan	1	2	120,482
Minnesota	1	1	24,460
Missouri	1	1	28,595
Montana	1	1	48,384
New Jersey	1	1	30,696
New Mexico	1	1	18,992
New York	3	6	255,087
North Carolina	2	2	55,874
Ohio	2	2	57,322
Oklahoma	2	3	105,432
Oregon	1	6	177,840
Pennsylvania	1	1	43,329
South Carolina	1	2	101,766
South Dakota	1	1	18,922
Tennessee	1	1	30,676
Texas	3	4	108,313
Utah	1	1	30,000
Virginia	1	1	36,290
Washington	1	1	23,165
West Virginia	1	1	23,315
Wisconsin	1	3	178,792
32 States	42	57	\$2,000,000

Active Training Grants 1965

32 States
42 Institutions and Agencies
57 Training Grants

WATER POLLUTION CONTROL

TRAINING GRANTS

FISCAL YEAR 1965

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT. NO.	AMOUNT
<u>ARKANSAS</u>			
<u>University of Arkansas</u> <u>Fayetteville</u>			
Heiple, Loren R., Ph.D. Dept. of Civil Engineering	Water Supply and Water Pollution Control Specialist Training	1T1-WP-85-01	\$22,738
<u>CALIFORNIA</u>			
<u>San Jose State College</u> <u>San Jose</u>			
Agardy, Franklin J., Ph.D. Dept. of Civil Engineering	Graduate Training in Water Quality Control	5T1-WP-66-02 3T1-WP-66-02S1	14,958 1,875
<u>Stanford University</u> <u>Stanford</u>			
Eliassen, Rolf, Ph.D. Dept. of Civil Engineering	Interdisciplinary Management of Water Resources & Water Quality	5T1-WP-38-03	60,218
Kruger, Paul, Ph.D. Dept. of Civil Engineering	Use of Radioisotope Techniques in Water Pollution Control	5T1-WP-9-04	40,000
<u>University of California</u> <u>Davis</u>			
Scott, Verne H., Ph.D. Dept. of Irrigation	Irrigation Effects on Control of Water Pollution	5T1-WP-7-04	23,756
<u>GEORGIA</u>			
<u>Georgia Institute of Technology</u> <u>Atlanta</u>			
Kindsvater, Carl E., Ph.D. School of Civil Engineering	Water Quality and Resources Engineering	5T1-WP-62-02	34,724
<u>HAWAII</u>			
<u>University of Hawaii</u> <u>Honolulu</u>			
Lau, L. S., Ph.D. Dept. of Civil Engineering	Pacific Island Sanitary Engineering	5T1-WP-69-02	35,000

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>INDIANA</u>			
<u>Purdue University</u> <u>Lafayette</u>			
Bloodgood, Don E. Dept. of Civil Engineering	Engineering and Design of Water Pollution Control Facilities	3T1-WP-13-03S1 5T1-WP-13-04	\$ 4,147 19,170
<u>IOWA</u>			
<u>Iowa State University</u> <u>Ames</u>			
Baumann, Robert E., Ph.D. Dept. of Civil Engineering	Chemistry of Waste Treatment Including Nuclear Wastes	5T1-WP-45-03	25,077
<u>KANSAS</u>			
<u>University of Kansas</u> <u>Lawrence</u>			
McKinney, Ross E., Sc.D. Dept. of Civil Engineering	Water Research and Training	5T1-WP-50-02	46,328
<u>KENTUCKY</u>			
<u>University of Kentucky</u> <u>Lexington</u>			
Lauderdale, Robert A., Ph.D. Dept. of Civil Engineering	Water Resources and Sanitary Engineering	5T1-WP-64-02	26,120
<u>MAINE</u>			
<u>University of Maine</u> <u>Orono</u>			
Sproul, Otis J., Ph.D. Dept. of Civil Engineering	Training Program in Water Pollution Microbiology	2T1-WP-17-04	35,960
<u>MARYLAND</u>			
<u>Johns Hopkins University</u> <u>Baltimore</u>			
Wolman, Gordon, Ph.D. Dept. of Sanitary Engineering & Water Resources	Water Science and Management	5T1-WP-51-03	32,872
<u>MASSACHUSETTS</u>			
<u>Tufts University</u> <u>Medford</u>			
Hanes, N. Bruce, Ph.D. Dept. of Civil Engineering	Water Pollution Control and Public Health Engineering	5T1-WP-40-03 3T1-WP-40-03S1	33,585 1,944

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>MASSACHUSETTS (Cont.)</u>			
<u>University of Massachusetts</u> <u>Amherst</u>			
Feng, Tsuan Hua, Ph.D. Dept. of Civil Engineering	Water Quality and Quantity Engineering	1T1-WP-77-01	\$23,191
<u>MICHIGAN</u>			
<u>University of Michigan</u> <u>Ann Arbor</u>			
Lagler, Karl F., Ph.D. Dept. of Fisheries	Physiological Action of Water Pollutants	5T1-WP-16-04	27,793
Velz, Clarence, Prof. Dept. of Environmental Health	Training in Water Pollution Control and Public Health	5T1-WP-15-04	92,689
<u>MINNESOTA</u>			
<u>University of Minnesota</u> <u>Minneapolis</u>			
Schroepfer, George J., Ph.D. Dept. of Civil Engineering	Sanitary Engineering and Water Resources Program	5T1-WP-33-03	24,460
<u>MISSOURI</u>			
<u>University of Missouri</u> <u>Columbia</u>			
Ray, Arliss D., Ph.D. Dept. of Civil Engineering	Water Quality Engineering	5T1-WP-30-02	28,595
<u>MONTANA</u>			
<u>Montana State College</u> <u>Bozeman</u>			
Wright, John C., Ph.D. Dept. of Botany & Bacteriology	Physical and Chemical Aspects of Water Pollution	5T1-WP-1-04 3T1-WP-1-04S1	45,000 3,384
<u>NEW JERSEY</u>			
<u>Rutgers University</u> <u>New Brunswick</u>			
Heulelekian, Hovhanness, Ph.D. Dept. of Environmental Sciences	Water Sanitation	5T1-WP-43-03	30,696
<u>NEW MEXICO</u>			
<u>New Mexico State University</u> <u>University Park</u>			
Clark, John W., Prof. Dept. of Civil Engineering	Water Resources Planning and Conservation	5T1-WP-48-03	18,992

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>NEW YORK</u>			
<u>Cornell University</u> <u>Ithaca</u>			
Falkson, Louis, Ph.D. Dept. of Economics	Training in Economic Aspects of Water Pollution	5T1-WP-4-04	\$32,906
Gates, Charles D., Ph.D. School of Civil Engineering	Sanitary Engineering and Water Resources Program	5T1-WP-3-04	39,129
Lynn, Walter R., Ph.D. School of Civil Engineering	Systems Engineering in Water Pollution Control	5T1-WP-42-03	38,976
<u>Manhattan College</u> <u>New York</u>			
Eckenfelder, W. W., Jr., Ph.D. Dept. of Civil Engineering	Summer Institute in Water Supply and Pollution Control	5T1-WP-32-03	20,258
McCabe, Brother Joseph Dept. of Civil Engineering	Training of Professional Specialists in Water Pollution Control	5T1-WP-26-04	74,658
<u>New York University</u> <u>New York</u>			
Dobbins, William E., Ph.D. Dept. of Civil Engineering	Water Supply and Water Pollution Control Engineering	5T1-WP-24-04	49,140
<u>NORTH CAROLINA</u>			
<u>North Carolina State</u> <u>Raleigh</u>			
Smallwood, Charles Jr. Dept. of Civil Engineering	Graduate Training of Water & Waste Treatment Engineers	5T1-WP-68-02	20,460
<u>University of North Carolina</u> <u>Chapel Hill</u>			
Weiss, Charles M., Ph.D. Dept. of Environmental Science & Engineering	Training Program in Water Pollution Control Engineering	5T1-WP-6-04	35,414
<u>OHIO</u>			
<u>Ohio State University</u> <u>Columbus</u>			
Dambach, Charles A., Ph.D. National Resources Institute	Interdisciplinary Water Resources Training	5T1-WP-39-02	26,612
<u>University of Cincinnati</u> <u>Cincinnati</u>			
Eye, J. David, Ph.D. Dept. of Civil Engineering	Research Training and the Aquatic Environment	5T1-WP-46-02	30,710

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>OKLAHOMA</u>			
<u>Oklahoma State University</u> <u>Stillwater</u>			
Dorris, Troy C., Ph.D. Dept. of Zoology	Program for Aquatic Biology Specialists in Water Pollution	5T1-WP-23-04	\$46,367
Gaudy, Anthony F., Jr., Ph.D. School of Civil Engineering	Bio-Engineering Training in Water Pollution Control	5T1-WP-19-04 3T1-WP-19-04S1	28,512 11,550
<u>University of Oklahoma</u> <u>Norman</u>			
Reid, George W., Prof. Dept. of Civil Engineering	Water Resource Development Training Program	5T1-WP-29-03	19,003
<u>OREGON</u>			
<u>Oregon State University</u> <u>Corvallis</u>			
Burgess, Fred K., Ph.D. Dept. of Civil Engineering	Engineering Control of Waste Water Disposal Training Program	5T1-WP-25-04	66,116
Castle, Emery N., Ph.D. Dept. of Agriculture Economics	Water Pollution Economics	5T1-WP-71-02	18,277
Curl, H. C., Ph.D. Dept. of Oceanography	Program for Water Pollution Specialists in Algal Biology	5T1-WP-21-04	15,931
Frolander, Herbert F., Ph.D. Dept. of Oceanography	Biological Oceanography	5T1-WP-61-02	20,700
Osterberg, C. L., Ph.D. Dept. of Oceanography	Marine Radiobiology	5T1-WP-59-02	29,000
Warren, Charles E., Ph.D. Dept. of Fish & Game Management	Freshwater and Marine Pollution Biology Program	5T1-WP-52-03	27,816
<u>PENNSYLVANIA</u>			
<u>University of Pittsburgh</u> <u>Pittsburgh</u>			
Kisiel, Chester C., Ph.D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Engineering	5T1-WP-41-03	43,329
<u>SOUTH CAROLINA</u>			
<u>Clemson University</u> <u>Clemson</u>			
Rich, Linvil G., Ph.D. College of Engineering	Graduate Program in Process Engineering of Waste Water Treatment	5T1-WP-8-04	63,510
Rich, Linvil G., Ph.D. College of Engineering	Summer Institute in Process Engineering of Waste Water Treatment	3T1-WP-5-03S1 5T1-WP-5-04	12,744 25,512

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>SOUTH DAKOTA</u>			
<u>South Dakota State University</u> <u>Brockings</u>			
Dornbush, James N., Sc.D. Dept. of Civil Engineering	Water Resources and Sanitary Engineering	1T1-WP-93-01	\$18,922
<u>TENNESSEE</u>			
<u>Vanderbilt University</u> <u>Nashville</u>			
Krenkel, Peter A., Ph.D. Dept. of Civil Engineering	Sanitary Engineering Training Program	5T1-WP-34-03	30,676
<u>TEXAS</u>			
<u>Texas A & M University</u> <u>College Station</u>			
Davis, William B. Dept. of Sanitary Engineering	Petro-Chemical Waste Abatement	5T1-WP-74-02	28,560
<u>University of Texas</u> <u>Austin</u>			
Gloyna, Earnest F., Ph.D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Training Program	5T1-WP-20-04	27,454
<u>William Marsh Rice University</u> <u>Houston</u>			
Busch, A. W., Ph.D. Dept. of Chemical Engineering	Chemical Engineering Training in Advanced Waste Treatment	5T1-WP-12-04	34,124
Busch, A. W., Ph.D. Dept. of Chemical Engineering	Biological and Engineering Process Design in Water Pollution Control	5T1-WP-44-03	18,780
<u>UTAH</u>			
<u>University of Utah</u> <u>Salt Lake City</u>			
Gaufin, Arden R., Ph.D. Dept. of Zoology and Entomology	Limnology and Sanitary Biology Aspects of Water Pollution	5T1-WP-54-03	30,000
<u>VIRGINIA</u>			
<u>Virginia Polytechnic Institute</u> <u>Blacksburg</u>			
Parsons, William A., Ph.D. Dept. of Civil Engineering	Graduate Training in Water Pollution Technology	5T1-WP-31-03	36,200

LOCATION AND PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
<u>WASHINGTON</u>			
<u>Washington State University</u> <u>Pullman</u>			
Dunstan, Gilbert H., Ph.D. Dept. of Civil Engineering	Water Pollution Control and Waste Water Disposal Engineering	5T1-WP-11-03	\$23,165
<u>WEST VIRGINIA</u>			
<u>West Virginia University</u> <u>Morgantown</u>			
Burchinal, Jerry C., Ph.D. Dept. of Civil Engineering	Water Supply and Waste Control	5T1-WP-72-02	23,315
<u>WISCONSIN</u>			
<u>University of Wisconsin</u> <u>Madison</u>			
Clarenbach, Fred A., Ph.D. Dept. of Civil Engineering	Water Resources Management	5T1-WP-60-02	50,542
Hasler, Arthur D., Ph.D. Dept. of Zoology	Training Program for Aquatic Scientists in Hydrobiology	5T1-WP-2-04	44,000
Lee, G. Fred, Ph.D. Dept. of Civil Engineering	Training Program in Water and Water Pollution Chemistry	5T1-WP-22-04	84,680

WATER POLLUTION CONTROL
 DEMONSTRATION GRANTS FISCAL YEAR 1965
 SUMMARY OF GRANT AWARDS BY STATES

State	Institutions and Agencies	Number Awarded	Amount Awarded
Arizona	1	1	\$ 95,000
California	6	8	228,518
Colorado	1	1	38,000
District of Columbia	2	2	91,970
Florida	1	1	48,637
Illinois	1	1	34,728
Louisiana	1	1	15,264
Massachusetts	1	1	19,682
Michigan	1	1	150,075
Minnesota	1	1	45,417
Missouri	1	1	39,864
New Jersey	1	1	23,338
New York	3	3	144,235
North Dakota	1	1	15,250
Oklahoma	1	1	9,985
Oregon	1	1	40,730
Pennsylvania	1	1	63,392
Tennessee	1	1	21,000
Washington	1	1	13,708
West Virginia	1	1	26,199
20 States	28	30	\$ 1,164,992

Active Demonstration Grants 1965

21 States
 30 Institutions and Agencies
 37 Demonstration Grants

WATER POLLUTION CONTROL
DEMONSTRATION GRANTS

FISCAL YEAR 1965

LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>ARIZONA</u>			
<u>Dept. of Water and Sewers</u> <u>Tucson</u>			
Beerman, Paul Director	Tucson Wastewater Reclamation Study	WPD 108-01-65	\$ 95,000
<u>CALIFORNIA</u>			
<u>Eastern Municipal Water District</u> <u>Hemet</u>			
Boen, Doyle F. General Manager	Reutilization of Wastewater Recycled Through Ground Water	WPD 81-01-65	29,200
<u>Engineering-Science, Inc.</u> <u>Oakland</u>			
Ludwig, Harvey F. President	Improved Waste Treatment Design of Submarine Disposal	WPD 12-02-64	_____*
<u>Los Angeles County</u> <u>Los Angeles</u>			
Lambie, John A. County Engineer	Waste Water Reclamation Project for Antelope Valley	WPD 50-02-65	59,100
<u>South Tahoe Public Utility</u> <u>District</u> <u>Bijou</u>			
Priday, W. F. Manager	Plant-Scale Regeneration of Granular Activated Carbon	WPD 84-01-65	11,640
Priday, W. F. Manager	Recovery and Reuse of Coagulant from Treated Sewage	WPD 85-01-65	14,060
Priday, W. F. Manager	Denitrification and Ion Exchange for Nitrogen Removal from Sewage	WPD 86-01-65	11,270
<u>Strandberg, Carl H., Individual</u> <u>Freemont</u>	Aerial Water Quality Reconnaissance Demonstration	WPD 20-03-65	5,000

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LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>CALIFORNIA (cont.)</u>			
<u>Stanford University</u> <u>Stanford</u>			
Eliassen, Rolf, Sc.D. Professor of Civil Engineering	Reclamation of Re-usable Water from Sewage	WPL 21-03-65	\$ 34,000
<u>University of Southern California</u> <u>Los Angeles</u>			
Tibby, Richard B., Ph.D. Professor of Biology	Feasibility of Waste Disposal in the Marine Environment	WPD 1-04(R1)-65 WPD 1-04(R2)-65	49,338 14,910
<u>COLORADO</u>			
<u>Beet Sugar Development</u> <u>Foundation</u> <u>Fort Collins</u>			
Fischer, James H. Manager	Facultative and Algae Ponds for Treating Beet Sugar Wastes	WPD 93-01(R1)-65	38,000
<u>DISTRICT OF COLUMBIA</u>			
<u>League of Women Voters</u> <u>Education Funds</u>			
Whittemore, Arthur E. (Mrs.) Trustee, Chairman of Water Resources Projects	Schools for Citizens on Land and Water Use for Tomorrow's Living	WPD 62-02(R1)-65	31,970
<u>National Association of Counties</u> <u>Research Foundation</u>			
Hillenbrand, Bernard F. Executive Director	Public Officials Water Pollution Control Demonstration Project	WPD 55-02-65	60,000
<u>FLORIDA</u>			
<u>University of Florida</u> <u>Gainesville</u>			
Black, A. P., Ph.D. Research Professor of Chemistry and Sanitary Science	Disinfectant and Physiological Effects of Iodine for Water Supply Treatment	WPD 19-03-65	48,637
Kiker, John E., Jr., Ph.D. Dept. of Civil Engineering	A Study of Estuarine Water Pollution Problems	WPD 15-03-64	_____*
<u>ILLINOIS</u>			
<u>Metropolitan Sanitary District</u> <u>Chicago</u>			
Kaplovsky, A. Joel, Ph.D. Director of Laboratories	Solids Concentration by Centrifuging and Centrate Utilization	WPD 77-01-65	34,728

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LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>LOUISIANA</u>			
<u>Tulane University</u> <u>New Orleans</u>			
Macdonald, Frank W., Ph.D. Professor of Civil Engineering	Bedding and Infiltration Studies of Sanitary Sewers of Gulf Coast Area	WPD 80-01-65	\$ 12,264
<u>MASSACHUSETTS</u>			
<u>Division of Fisheries and</u> <u>Game Field Headquarters</u> <u>Westboro</u>			
Tompkins, William A. Chief Aquatic Biologist	Massachusetts Pesticide Study	WPD 25-03-64	_____*
Tompkins, William A. Chief Aquatic Biologist	Massachusetts Pesticide Monitoring Study	WPD 88-01-65	19,682
<u>MICHIGAN</u>			
<u>University of Michigan</u> <u>Ann Arbor</u>			
Goodman, Brian L. The National Sanitation Foundation	Development of Criteria for Packaged Compact Sewage Treatment Plants	WPD 74-01-65	150,075
Vaughan, Henry F., Ph.D. National Sanitation Foundation - Michigan School of Public Health	Detroit Metropolitan Environmental Study	WPD 5-03-64	_____*
<u>MINNESOTA</u>			
<u>Minnesota State Department</u> <u>of Health</u> <u>Minneapolis</u>			
Bauer, Henry, Ph.D. Deputy Executive Officer	Demonstration of the "Channel Aeration Process" in Treatment of Sewage	WPD 33-01-65	45,417
<u>MISSOURI</u>			
<u>Water and Sewerage Technical</u> <u>School</u> <u>Neosho</u>			
Caughran, Lloyd Director	Demonstration School for Training Water and Sewerage Systems Operators	WPD 2-04-65	39,864

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LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>NEBRASKA</u>			
<u>University of Nebraska</u> <u>Lincoln</u>			
Engelhard, Warren E., Ph.D. Dept. of Microbiology	Effect of Microbial Flora on Resins in Water Softening and on Water Pollution	WPD 72-01-64	_____*
<u>NEW JERSEY</u>			
<u>Division of Fish and Game</u> <u>Bureau of Fisheries Management</u> <u>Trenton</u>			
Pyle, A. Bruce Principal Fisheries Biologist	Fish and Aquatic Life Consideration in New Jersey's Water Pollution Abatement Program	WPD 4-04(R1)-65	23,338
<u>NEW YORK</u>			
<u>County of Nassau</u> <u>Dept. of Public Works</u> <u>Mineola</u>			
Gibbons, Eugene F. Commissioner of Public Works	Water Conservation by Waste Water Reclamation and Injection or Recharge	WPD 71-01-65	85,550
<u>County of Westchester</u> <u>Department of Public Works</u> <u>White Plains</u>			
Brown, James M. Superintendent, Sewage Treatment	Demonstration of the Effect of Polymers on the Dewatering and Thickening of Sewage Solids	WPD 47-02-65	4,000
<u>New York State Department</u> <u>of Health</u> <u>Albany</u>			
Stevens, Donald B. Chief, Research Unit	Treatment Needed by Sewage Before Injection-Well Recharge	WPD 83-01-65	54,685
<u>NORTH DAKOTA</u>			
<u>North Dakota State Health Dept.</u> <u>Bismark</u>			
Van Heuvelen, Willis Chief of Environmental Health and Engineering Services	Protein Waste Water Treatment from Potato Starch Manufacture by Anaerobic Fermentation- Aerobic Stabilization	WPD 94-01-65	15,250
Van Heuvelen, Willis Chief of Environmental Health and Engineering Services	Potato Processing and Domestic Wastes Treatment by Mechanical Aeration	WPD 9-03-64	_____*

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LOCATION AND PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
<u>OKLAHOMA</u>			
<u>University of Oklahoma Research Institute</u> <u>Norman</u>			
Reid, George W. Professor of Civil Engineering	Development of Criteria for the Removal of Nitrogen and Phosphorus by Bio-Oxidation Ponds	WPD 7-03-65	\$ 9,985
<u>OREGON</u>			
<u>Oregon State University</u> <u>Corvallis</u>			
Burgess, Fredrick J. Professor, Dept. of Civil Engineering	Demonstration of Quantity-Quality Effect of Water Re-Use on Treatment Process	WPD 90-01-65	40,730
<u>PENNSYLVANIA</u>			
<u>Pennsylvania State University</u> <u>University Park</u>			
Farrell, Michael A., Ph.D. Director, Agricultural Experiment Station	Renovation of Sewage Effluent for Reuse as a Water Resource	WPD 95-01-65	63,392
<u>TENNESSEE</u>			
<u>Tennessee Game and Fish Commission</u> <u>Nashville</u>			
Stubbs, John M. Supervisor Pollution Control and Warmwater Streams	Development of Tennessee Fish Protection Surveillance System	WPD 3-03-64 WPD 3-03S1-65	* 21,000
<u>WASHINGTON</u>			
<u>University of Washington</u> <u>Seattle</u>			
Oglesby, Ray T., Ph.D. Professor of Sanitary Biology	Dilution Effects on Nutrients and Primary Productivity	WPD 38-01(R1)-65	13,708
Sylvester, Robert O., Ph.D. Dept. of Civil Engineering	Influence of Site Preparation on Quality of Impounded Water	WPD 6-03-64	_____*
<u>WEST VIRGINIA</u>			
<u>West Virginia University</u> <u>Morgantown</u>			
Burchinal, J. C. Professor, Dept. of Civil Engineering	A Study of the Oxidation Ditch Method of Waste Treatment	WPD 36-01-65	26,199

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